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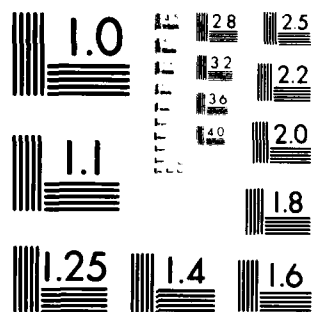
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STRATEGIC, TACTICAL AND DOCTRINAL MILITARY CONCEPTS

The Deterrence Concept: A Synthesis Based on a Survey of the Literature

T. N. Dupuy Associates, Inc.
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1 April 1980

Final Report for Period 1 May 1979—1 April 1980

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DNA 5305F	2. GOVT ACCESSION NO. AD-A114 953	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) STRATEGIC, TACTICAL AND DOCTRINAL MILITARY CONCEPTS The Deterrence Concept: A Synthesis Based on a Survey of the Literature		5. TYPE OF REPORT & PERIOD COVERED Final Report for Period 1 May 79-1 Apr 80
7. AUTHOR(s) Gay Hammerman		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS T. N. Dupuy Associates, Inc. P.O. Box 157 Dunn Loring, Virginia 22027		8. CONTRACT OR GRANT NUMBER(s) DNA 001-79-C-0285
11. CONTROLLING OFFICE NAME AND ADDRESS Director Defense Nuclear Agency Washington, D.C. 20305		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Subtask V99QAXNL122-84
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 1 April 1980
		13. NUMBER OF PAGES 82
		15. SECURITY CLASS (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION DOWNGRADING SCHEDULE N/A
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES This work sponsored by the Defense Nuclear Agency under RDT&E RMSS Code B370079464 V99QAXNL12284 H2590D.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Nuclear Deterrence Flexible Response Counterforce Targeting Mutual Assured Destruction Countervalue Targeting Selective Nuclear Targeting Finite Deterrence		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Includes an evaluative, integrative survey of the literature on deterrence, 1946-1979; a presentation of the essential components of deterrence; a contrast of counterforce strategies with finite deterrence, and of the cyclic alternation of these approaches in U.S. theory and policy; and an examination and assessment of recent criticisms of deterrence.		

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The concept of deterrence has recently come under attack from two directions -- from what might loosely be called "hawks" and "doves." Some members of the defense community argue that deterrence has been outmoded by the Soviet arms buildup and for a nuclear war-waging capability, and suggest that deterrence be abandoned in favor of US war-waging strategies and buildup of weapons and forces, a posture which they view as something different from deterrence. On the other hand, some academic critics of deterrence, most of whom favor less military spending, have carried out historical or theoretical studies that purport to show deterrence as unsuccessful; these critics generally urge less emphasis on deterrence and more stress on political/diplomatic methods of exerting influence.

In addition, some advocates of deterrence visualize it as a kind of symmetrical model in which each of two opponents has an invulnerable retaliatory force and a vulnerable population -- the kind of deterrence usually called finite deterrence, and sometimes, in recent years, MAD (for mutual assured destruction). These advocates tend to view any deviation from this particular model as a betrayal of the deterrence concept.

The conclusion of the present report is that the deterrence concept is basically sound, is appropriate to the nuclear age, and is not necessarily outdated, and that what may have appeared as disqualifying flaws in it have actually been distortions of it.

This conclusion has developed from an extensive, although by no means exhaustive, survey of the literature on deterrence from 1946 through 1979. (A bibliography of about 85 of the works reviewed, with annotations, is appended to this report.) From this survey it appears that the history of deterrence theory can be summarized as follows (the dates are approximate and the periods overlap):

- 1946-1955. Beginnings of deterrence theory. The basic nature of the concept articulated.

- 1956-1965. The "golden age." Refinements and clarifications of deterrence theory; major synthesizing works.
- 1966-1970. Inactive period for deterrence theory.
- 1971-present. Critical reevaluation of deterrence theory.

Essentials of Deterrence

Deterrence is the restraining of one's opponent from a course of action by communicating its unpleasant consequences to him. Nuclear-age deterrence, which is the kind of deterrence considered in this report, implies using possession of nuclear weapons to deter the use of nuclear weapons, and sometimes to deter other actions. Nuclear-age deterrence grew out of the struggle by defense thinkers and policy makers in the West to gain some intellectual and practical control over the enormous power of nuclear weapons. Its development was stimulated by the determination, born of World War II experience, to assure peace through military preparedness. It was early pressed into service in the defense of Western Europe against a perceived Soviet threat, being used to compensate for the inferiority of the conventional defensive forces available to the West. This double role of US deterrence -- to deter a nuclear attack on the United States and also to deter any attack, nuclear or conventional, on Western Europe -- has posed permanent logical and practical problems.

The classic literature on deterrence, from Bernard Brodie's first 1946 essays and Winston Churchill's 1955 speech in the House of Commons, through the "golden age" writings of Raymond Aron, Brodie, Herman Kahn, Henry Kissinger, Albert Wohlstetter, and others, yields the essentials of the deterrence concept.

The fundamental requirement of deterrence is the credibility of the threat that is implicitly posed. Credibility depends on the opponent's perception of the threat -- it has to be credible to him. It also has to be real; bluffing is not adequate for deterrence. The essential components that must exist, and must be perceived by the opponent to exist, are a nuclear force that is able to survive a first strike, if necessary, and still do unacceptable damage, combined with the will or intent to retaliate. Even if these essential elements are present, deterrence can be undermined if the force is provocative through sheer overwhelming size or disposition. (If it were vulnerable, i.e., not survivable, it could also be provocative by providing a tempting target and by appearing designed to strike first, rather than survive a first strike; this is another reason why survivability is an essential requirement of the deterrent force.)

Deterrence is not an isolated structure, unrelated to the actual use of force. There has to be a credible bridge between deterrence and the actions that would be taken if deterrence should fail. Without this bridge, credibility fails and deterrence fails.

Counterforce Strategies and Finite Deterrence

Deterrence strategies may be classified as counterforce or countervalue, on the basis of the targets they threaten to destroy. Counterforce strategies aim at destroying enemy missiles in their silos or over enemy territory. Countervalue strategies aim at destroying what the enemy values, usually interpreted as a large fraction of the population and industry. Counterforce strategies are more in harmony with traditional principles of military strategy and morality, but countervalue strategies call for smaller forces and are claimed by their advocates to be more humane, since, if both sides subscribe to the countervalue approach, neither will ever be willing to strike the other, and nuclear war will theoretically be surely and permanently prevented. This kind of symmetrical mutual deterrence is usually called finite deterrence (as indicated above, p. 1).

Since the 1950s, there has been a pattern of cyclic alternation between counterforce strategies and finite deterrence in US deterrence theory and policy. The countervalue approach of "massive retaliation" was followed by the ascendance of counterforce strategies until about 1963, when there was a turn toward finite deterrence. Finite deterrence in the rather extreme form of bilateral mutual assured destruction -- each side capable of wiping out about a quarter of the other's population and half the other's industry after receiving a first strike -- underwent reevaluation and adjustment, beginning about 1969. There currently appears to be a strong trend within the defense community toward a return to counterforce strategies.

Conclusions

The report concludes that the deterrence concept still appears sound and relevant to present circumstances, and that the most telling criticisms of it are actually criticisms of ways in which it has been distorted:

- Deterrence requires, above all, credibility, and there can be no credibility without a believable link between the deterrence posture and the action that will be taken if, despite that posture, the other side attacks. The threat to kill 25% of the Soviet population while the US population is exposed to attack lacks

any credible link between threat and action, and thus is not in accord with sound deterrence theory.

- Deterrence requires an invulnerable retaliatory force, and cannot remain effective if the US retaliatory force becomes vulnerable to a Soviet first strike.
- The retaliatory force has to be capable of doing unacceptable damage, but unacceptable damage is a function of what the opponent values. A thoroughly informed view of what is valuable to the opponent is necessary if an effective threat is to be posed.
- Deterrence, for the United States, has to be consistent with commitments to allies. Thus, it must either be believably extended to include nuclear strikes against any state that attacks US allies or it must be backed up by other provisions for defending them.
- Deterrence cannot be static. It has to be constantly reassessed and adjusted to changes in technology, the balance of forces, and the world political system.
- Deterrence requires the will of leaders and society to provide the forces necessary for an effective deterrent threat and the intent to follow through with action, even at great risk and sacrifice, if deterrence should fail.

PREFACE

This report was prepared by Gay Hammerman, with the research assistance of Dee Alyson Horne and James J. Knights. Allen R. Clark made important contributions to the portions of the paper dealing with theory of games. Useful insights and bibliography were contributed by Angus M. Fraser and Graham Vernon, and the report was reviewed by Trevor N. Dupuy and Grace P. Hayes.

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Recently deterrence, like most institutions that achieve any longevity, has come under attack from two opposing sides. Many tough-minded defense-community analysts see it as an obstacle to realistic war-prevention and war-fighting strategies. Colin Gray, for example, has written of it recently in tones suitable for the obituary page. (Gray 1979) When Gray writes of the late Bernard Brodie that the years 1946-1978 bound his career as a strategist, one can hardly escape the image of a tombstone for deterrence itself, to whose development Brodie contributed so much. At the same time, some sixties-generation, antiestablishment academics, seeing deterrence as a hostile, negative strategy, are eager to dismantle it in favor of "other kinds of international relationships" that do not involve the threat of force. (Morgan 1977:214-15) It is a conclusion of this paper that the deterrence concept is soundly based and strong, and that it is largely distortions of the concept, both by its opponents and by some of its ill-informed advocates, that have opened it to attack.

Definitions

No discussion of a concept can begin without a definition, and there are many available for deterrence. None of them seems to offer more than a good standard dictionary does, and the Oxford English Dictionary will be used as the reference here.

The root and original meaning of the word deter is to frighten away, but the OED's third subdefinition is probably closer to the word's most common meaning in everyday, nontechnical usage: "To restrain or keep back from acting or proceeding by any consideration of danger or trouble." This not only is the most usual general meaning but also is closest to the meaning deterrence has had since its appearance as the label for a nuclear-age concept after World War II. It is true that the word terror has been prominently used in the rhetoric of deterrence and that nuclear weapons inspire well-merited terror, but the emotional tone of deterrence is relatively dispassionate. The emphasis is not on fear but rather on prevention by the display of unpleasant consequences in contrast to prevention by the

use of force. With simplicity as an aim, the working definition for this paper will be this adaptation of the OED's words:

Deterrence is the restraining of one's opponent from a course of action by displaying its unpleasant consequences.

However, deterrence has certain connotations in its nuclear-age strategic sense, and they cannot be woven into a one-sentence definition. Following are some of them:

First, deterrence in the current sense is something new, and is specific to the nuclear age. It developed in response to the characteristics of nuclear weapons. The general idea of preventing attack through a display of strength is ages old, but, as Andre Beaufre has said, "The term is new . . . bearing witness to an attitude of mind quite different from that of the past and clearly the product of the existence of nuclear weapons." (1965: 23; emphasis added.) No study that fails to recognize the deterrence concept as a product of the nuclear age can say anything very useful about it.

Second, the great dependence on prevention through the display of consequences is a special characteristic of nuclear-age deterrence. "What is new is . . . the tendency to rely very heavily, if not absolutely, upon the effectiveness of the threat to employ deterrent forces." (Coffey 1963:2) As far as strategic nuclear forces are concerned (nuclear weapons mounted on intercontinental ballistic missiles), deterrence has been virtually the only US strategy for their use against an adversary and virtually the only US response to the threat of such weapons in the hands of an adversary.

Third, an aspect of this heavy dependence on prevention, namely the fact that nuclear-age deterrence includes self-deterrence, is worth noting. It has been characteristic of post-World War II US deterrence theory and policy that they have sought not to use nuclear weapons, even when there was little danger of retaliation; and the avoidance of all use, not just enemy use, has been part of the deterrence concept from the beginning. This effort has been pursued ad absurdum in recent years by some advocates of finite deterrence, and some arms-control advocates, to include making sure that the Soviet Union will not be inferior in retaliatory striking power to the United States.* However, there is no reason to denigrate or apologize for the fact that US deterrence theorists have always had as a basic goal the avoidance of the use of nuclear weapons, even by the United States, and have tried to construct strategies that

*See discussion of finite deterrence, below.

would make such use as unlikely as possible. Again, this self-restraint is a product of the same nuclear destructiveness that created deterrence in the modern sense, and is an inherent part of it.

Fourth, largely as a result of historical circumstances, including the development of the logical system known as the theory of games, and also the development of the high-speed computer, deterrence has been not just a general display of overwhelming strength but a peculiarly calculated display of consequences. The theoretical advantages and disadvantages of various decisions on the use of strategic weapons by each of two adversaries are calculated. In addition, there is "the attempt to structure [the deterrent forces] so that they can inflict a given -- and therefore calculable -- level of damage upon another country." (Coffey 1963:2; emphasis added.)

Finally, deterrence is a Western, and specifically a United States, concept. Although it was presented to the world by an Englishman, and owes much of its clearest exposition to French thinkers, essentially it is American in origin and development. Even as Churchill described it in eloquent language in 1955, he acknowledged that the United States would have primary responsibility for carrying it out. In elegantly summarizing the theory, Raymond Aron has implied that it was partly his distance from the creative work -- which had been done in the United States -- that allowed him to see it with clearer perspective. (1964:31) Deterrence is not a Soviet concept, and this fact has many implications, some of which will be discussed below. In this paper, the point of view will be understood to be American. Unless the context makes clear another meaning, it will be understood that when deterrence is discussed, what is meant will be deterrence by the United States, or the United States in company with its allies.

Deterrence Classified by What is Deterred

For the ease and clarity of the discussion that follows, it seems well to classify deterrence at the outset into categories based on what is deterred in each case, and to establish consistent terms for these categories. Four kinds of deterrence may be distinguished on this basis:

- Deterrence of direct attack on the United States, usually visualized as massive nuclear attack. This deterrence is assumed to be effected by the destructive capability of the survivable US retaliatory force. The US retaliation, should deterrence fail, has generally been assumed to be automatic, with no decision necessary, and thus this kind of deterrence is sometimes termed, especially by British writers, passive

deterrence. It could be called strategic nuclear deterrence, and it could be called SIOP (Single Integrated Operations Plan) deterrence, since the US SIOP embodies the threatened retaliation that presumably makes this kind of deterrence effective. It is Herman Kahn's (1960) "Type 1" deterrence and Brodie's (1959:273) "basic" deterrence. In this paper, it will be called strategic nuclear deterrence.

- Deterrence of attack against NATO countries. Any effort to use the US strategic nuclear capability to deter attacks against allies or others is called extended deterrence. From the beginning of deterrence theory in the decade following World War II, extended deterrence for Western Europe has had a special importance, sometimes being seen as an integral part of strategic nuclear deterrence. An attack on NATO is clearly perceived by the US leadership and attentive public to be in a different category from attacks on other non-US territory, and deterrence of such an attack thus forms a distinct category. In this paper, such deterrence will be termed deterrence for NATO.

- Deterrence of attack against non-NATO allies and friends. Strategic nuclear deterrence has been extended at various times -- explicitly, by implication, or by widely held assumption -- to deterrence of attacks against countries to which the United States has treaty obligations and/or perceived moral obligations of special weight. These include, or have included, Japan, Korea, Israel, Australia, New Zealand, and Taiwan (as the Republic of China).^{*} This kind of extended deterrence will be termed deterrence for non-NATO allies.

- Deterrence of other aggressive acts and provocations. For a brief period in the 1950s, the period of "massive retaliation" policy, an effort was made to extend strategic nuclear deterrence to cover any moderately serious aggression or provocation, but it was almost immediately recognized that such a deterrent threat was not effective because it was not credible. No one would have believed that the United States would attack the Soviet Union with nuclear bombs over a new Soviet-instigated invasion of South Korea by North Korean forces, much less over Soviet support for an insurrection in, for example, Indochina. Then, in the late 1950s, and especially the early 1960s, there was a strong US emphasis on using the possession of strong, flexible, conventional forces to prevent such threats to

^{*}The Secretary of Defense's Defense Report for fiscal year 1979 stated that the United States has a "particular interest" in the independence and territorial integrity of Western Europe, Israel, Japan, Australia, and New Zealand. (p. 17)

international stability. The term deterrence was applied to this approach also.*

A considerable amount of recent literature on deterrence deals with this kind of deterrence of moderately provocative actions by the implicit threat of nuclear or nonnuclear military force. (Morgan 1977; Naroll et al. 1974) However, there are serious difficulties in grouping it along with strategic nuclear deterrence and extended deterrence, and, in fact, in calling it "deterrence" at all.

Deterring and dealing with moderately aggressive and provocative acts is basically indistinguishable from traditional statecraft, in which some kind of threat is always at least indirectly implied. Traditional statecraft, in fact, is what this kind of "deterrence" is. It is different in kind, not just in degree, from nuclear strategic deterrence and extended deterrence. It does not necessarily involve nuclear weapons or threats, and it does not carry the other connotations of nuclear-age deterrence that have been discussed above. Extrapolating the results of statecraft "deterrence" efforts in an effort to learn more about the effectiveness of strategic nuclear deterrence and extended nuclear deterrence is, in the author's opinion, usually misleading and unproductive. There are not enough similarities between the two categories to make the process valid **

This paper will deal primarily with strategic nuclear deterrence, deterrence for NATO, and, to a lesser extent, deterrence for non-NATO allies. It will refer to deterrence of moderately provocative acts, those not involving direct threats to the United States or its allies, as statecraft, or statecraft "deterrence."

Beginnings of Deterrence

Now that deterrence has been defined, the next task is to examine its inner nature, to try to discover the essential components that make it up. It seems most useful to start the work by looking at the beginnings of deterrence. This is not done as a historical exercise, but rather because such a tremendous

*This kind of deterrence is Kahn's (1960) "Type 3" deterrence -- defined as deterrence of "moderately provocative acts." (His "Type 2" deterrence was deterrence of "extremely provocative acts.")

**The bibliographic entries for Morgan 1977 and Naroll et al. 1974 expand this point.

volume of material has been written on deterrence, and the concept has been molded into so many different forms during the past 34 years that the soundest approach seems to be to try to identify what has been essential from the start.

Nuclear Weapons. The beginnings of the deterrence concept appeared very soon after the headlines announcing the atom bombing of Hiroshima and Nagasaki, although they apparently received relatively little attention at the time. Bernard Brodie wrote in 1946: "Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose." (1946b:76) Here is the fundamental idea: using nuclear weapons to prevent the use of nuclear weapons.

Brodie's 1946 words have recently been criticized by some who see a necessity for being prepared to fight a war, if need be, rather than simply constructing theories and forces to prevent it. (Pipes 1977; Gray 1979) However, the words have to be taken in the context of their time and seen for what they were, an effort to grapple realistically and responsibly with the enormity of nuclear destruction. This was a time in which many opinion leaders were saying that there must be one world or none, that an international government to control nuclear weapons was the only way to avert a global holocaust. Realistic observers, like Brodie, recognizing that no utopian world government was going to be created, and rejecting the idea that the alternative was an eventual global war far more deadly than the devastating one just ended, chose and developed the concept of deterrence.

What were the specific characteristics of nuclear weapons that these early writers were struggling to come to terms with? The first was their extraordinary deadliness and destruction, in relation to the size of the weapon and the short time in which it performed its destruction. The firebombing of Tokyo had done more damage in one night than the bombing of Hiroshima, but not in one minute from one airplane. A second characteristic was the generally assumed one that there could be no defense against these weapons. (See e.g., Beaufre 1965:24.) A third was the conclusion from these two characteristics that these weapons were extraordinarily suited for massive, decisive surprise attacks. It was correctly assumed that the United States would soon lose its monopoly over nuclear weapons and that it would have to face the possibility of a surprise attack from the Soviet Union. Brodie's answer was that a surprise attack would not work if the attacker's cities would also be destroyed -- even if evacuated they would hold the physical plant on which the nation depended. Thus surprise attack with nuclear weapons

might not be so tempting to an aggressor after all. (Brodie gave a Jacob Viner credit for first suggesting and elaborating this view, the essence of deterrence.) With all this in mind, Brodie urged that the "first and most vital step" for the United States was to be ready to carry out nuclear retaliation in kind. But he made it clear that the retaliation itself was not the point, that he was not suggesting that anything very desirable would be gained by retaliation. It was the threat of the retaliatory force, its ability to avert war, that was the point. That is the context for Brodie's statement that the chief purpose of our military establishment must now be to avert war. There is no defense against nuclear weapons, he affirmed, but their effects can be mitigated to some extent. Possession of these weapons can be used to deter their use by a potential aggressor against one's country. If this deterrence is to be effective one must possess nuclear weapons deployed in a retaliatory force that is invulnerable to surprise attack, while willingness to use that force must be communicated to the potential enemy in conjunction with measures to reduce the damage hostile weapons could do to one's country.

If surprise attack was to be prevented by the threat of retaliation, then the retaliatory force had to be invulnerable to a surprise attack, that is, survivable. Brodie made this point specifically. "If the technological realities make reduction of vulnerability largely synonymous with preservation of striking power, that is a fact which must be faced." (Brodie 1946b:77) He also felt that the whole society should be made as invulnerable as possible, to avoid offering temptation. (1946b:77) Invulnerability was an inherent part of deterrence. Civil defense was an aid to deterrence, not just a means of saving some people if an attack came. "We wish to reduce our vulnerability in order to reduce the chances of our being hit at all." (1946b:104) Thus deterrence in its essence appears clearly in this very early work, and may be summarized as follows: There is no defense against nuclear weapons, although passive defense measures can reduce the damage they do. Possession of these weapons can be used to deter their use by an aggressor against one's country. If this deterrence is to be effective, one must possess nuclear weapons deployed in a retaliatory force that is invulnerable to surprise attack. Civil defense protection for one's population will enhance deterrence.

Brodie made several other still relevant and still repeated points in 1946: He acknowledged the argument already being made that possession of nuclear weapons would be a power equalizer for small countries, and argued against it. (70, 77n) He recognized that, while deterring war, nuclear weapons would not necessarily prevent an aggressor nation's committing one degradation after another while using the threat of nuclear war to

prevent resistance (later called "salami tactics"), until finally a status quo nation like the United States could no longer avoid war, no matter how terrible. (85) He urged dispersal of industries and population to reduce vulnerability. (104-05)

Preparedness as War Prevention. Although deterrence is here considered as a nuclear-age concept, there is some continuity between the pre-World War II trend toward preparedness as the best way of preventing aggression and the post-World War II deterrence concept. And although the nature of nuclear weapons was almost certainly the most important factor in the development of deterrence, the preparedness trend played a role also.

In the United States and Western Europe there had been a strong body of public opinion in the 1930s that saw armaments and their makers as largely responsible for war and saw disarmament as the most hopeful road to war prevention. As Hitler's conquests accumulated, the weight of influential opinion shifted to viewing military weakness as an invitation to aggression. In the United States the shift in the balance of public opinion seems to have come about the summer of 1940, with the fall of France. Since that time, it seems safe to say, a consensus of influential Americans and a majority of the US public have favored a strong national defense establishment in peacetime as the best preventive for war. Thus deterrence of massive nuclear attack by the possession of invulnerable retaliatory forces took its place in a cluster of post-World War II security instruments that included collective security (the alliance systems Americans had previously shunned) and, in the 1960s, upgraded conventional forces and special forces. In this sense, deterrence is a direct descendant of the devotion to preparedness that developed during World War II.

Churchill's Formulation. As Fred Ikle has said (1974:269), it was Winston Churchill who first presented to the world at large the concept of deterrence. Churchill's statement came in 1955, after the detonation of hydrogen bombs by the United States and the Soviet Union, and the awesome nature of those events seems almost palpable in his speech. Churchill presumably acquired the heart of the deterrence concept from US thinkers via US statesmen. In addition to clothing the concept in Churchillian language -- "by a process of sublime irony . . . safety may well be the sturdy child of terror, and survival the twin brother of annihilation" -- Churchill made basic points about its nature. Like Brodie, he stressed that the retaliatory force must be invulnerable, must be immune against surprise in the sense that surprise must not be able to prevent retaliation. (Churchill 1955:1092) He also emphasized the importance of clearly communicating the nature of the deterrent weapons systems. Once the opponent understood clearly what he could

expect in case he attacked, Churchill said, "You might go to dinner and have a friendly evening." (1092) (Churchill consistently used the substantive plural noun deterrents, not deterrence, possibly because he was thinking and talking about specific British nuclear deterrent forces that were being created, and thus saw deterrence in terms of units of deterrent power.)

Churchill discussed another aspect of deterrence, present almost from the beginning, and already implied in US Secretary of State John Foster Dulles's "massive retaliation" speech of the year before. The Soviet Union was greatly superior in conventional forces, but the overwhelming nuclear power of the United States, supported by the British deterrent, could compensate for Soviet conventional superiority and deter Soviet conventional attack against Western Europe. This continuing thread in deterrence theory -- the protection of Europe -- was to prove a tangled one. As long as the Soviet Union was markedly inferior in nuclear weapons, Western nuclear weapons could indeed logically deter conventional attack and also deter strategic nuclear attack. But as Soviet military strength grew, the strain of trying to put US nuclear strength in two places -- compensating for conventional inferiority in Europe and deterring strategic nuclear attack -- was to become evident. In any case, Churchill clearly expressed one of the early and lingering aspects of deterrence -- the idea that the great power of nuclear weapons could be used as an all-purpose deterrent against a conventional threat as well as against nuclear threats.

A Summary of the Concept and Its Early History. Deterrence, then, grew out of the struggle to gain some intellectual and practical control over the enormous power of nuclear weapons and out of the war-born determination to keep the peace through military preparedness. It was early pressed into service to compensate for conventional-forces inferiority in the defense of Western Europe.

The basic deterrence concept from the beginning was that attack by nuclear weapons could be deterred by maintaining an invulnerable retaliatory force capable of wreaking great destruction on an aggressor nation, by communicating clearly to potential aggressors the existence of this force, and by communicating the determination to use it. It will be noted that the concept was simple and easy to grasp, not abstrusely intellectual, and that the essentials of later theory were there from the beginning, as was one of deterrence's permanent dilemmas -- how to protect Europe. The ideas were clearly communicated to the world by a political leader before any complex theoretical work on the subject had been carried out by professional defense analysts.

The Growth of Theory

The great productive age of deterrence theory was the period 1956-1965.* During these years, against a background of growing nuclear arsenals and the acquisition by both the United States and the Soviet Union of intercontinental ballistic delivery missiles (ICBMs), deterrence theory was refined by civilians trained in mathematics and the natural and social sciences. Very little that is new has been written since 1965, and anyone who rereads the classic works of c. 1960 is bound to be struck with the preciseness of their relevance to the period c. 1980. Before summarizing the contributions of that period it seems appropriate to discuss briefly another development -- in addition to the intercontinental missiles -- that influenced the development of theory in the period.

The Theory of Games. Deterrence is known, especially by its detractors, for dependence upon complex calculations of behavior based on a logical, highly structured approach to decision making. In reality, the logic of deterrence is extremely simple. Neither its essential formulation, which has been outlined in the preceding section, nor its development during the decade 1956-1965, required any esoteric logical tools. It appears highly likely that deterrence would exist, with all its essential characteristics, even without the logical theory -- called the theory of games -- that is often associated with it.

However the theory of games did appear on the Western intellectual scene at about the same time nuclear weapons did, and it did offer a logical approach for dealing with the problem of two powerful opponents, each possessing destructive power of a magnitude previously unknown. The mathematician John von Neumann had proved the basic theorem of the theory of games in 1928, but the influential book that introduced the approach to a wide audience was The Theory of Games and Economic Behavior (1944), by von Neumann and Oskar Morgenstern, an economist.**

What von Neumann had proved is something that is not at all intuitively obvious: If two players are engaged in a zero-sum game, that is, a game in which one player wins to the same extent that the other loses, there is one best strategy for each

*Colin Gray (1979) terms this period the "golden age" of deterrence theory, and the dates used here are taken from his paper. Gray marks the beginning of the period from the publication of William Kaufman's 1956 essay "The Requirements of Deterrence" (see bibliography).

**Schelling (1960) presents a good explication of the theory as it applies to international relations (see bibliography).

player to follow, and that strategy does not depend on guessing or deducing what the other player plans to do. It is the best strategy, in the long run, whatever the other player does. This strategy is the minimax strategy, the strategy that minimizes the maximum gains the opponent can make. Furthermore, in the long run, each player can do no better than follow the minimax strategy; there is no need to keep shifting strategies in response to what the opponent does.

There are several facts that should be noted about these basic theory-of-games statements, before one applies them to military strategy or deterrence theory. First, they apply only to zero-sum games. Theory of games becomes much less clear beyond zero-sum games, and war is not always a zero-sum game. One side does not necessarily win when the other loses -- one side's loss may also be the other side's loss. Also, the minimax strategy is a pessimistic strategy, that is, it assumes the worst possible case and then minimizes the damage that can be done. It does not allow for high risks and great gains. Finally, the minimax strategy is only proven best over the long run, that is, when the game is played many times. If one is concerned with only one very high-stakes game, it may seem wiser to change the cards one holds or the rules of the game than to count on the eventual triumph of the minimax strategy.

Theory of games, despite its mathematical elegance, has not proven very useful in its applications either to economics or to military strategy. It has proven useful in operations research, however, with effective applications to such problems as strategies of submarine hunting and planning deployment of antiballistic missiles. In deterrence theory, it was responsible for a number of refinements, e.g., the matter of signaling commitment to a given course of action, and it probably determined to some extent the kind of rational assumptions that were made and the generally dispassionate, logic-exercise tone of much of the writing about deterrence. The way in which theory of games was seized upon and interpreted by some analysts also seems to have had an influence on the development of one approach to deterrence -- finite deterrence, which is discussed in a later section of this paper.

Major Contributions. Of the many thinkers who did important work in the development and refinement of deterrence theory in this "golden age," the most significant were probably Brodie, Henry Kissinger, Kahn, and Albert Wohlstetter. Summarizing two landmark contributions -- Wohlstetter's "The Delicate Balance of Terror" (1958), and the chapters on deterrence from Kissinger's The Necessity for Choice -- will provide a concise statement of the theory.

Although the necessity for the retaliatory force's survivability had been recognized from the beginning by thinkers like Brodie, the point had not been hammered home to the attentive public. Wohlstetter did this. He made it clear that the United States could not sit back and enjoy deterrence in the belief that central nuclear war was impossible because both superpowers had nuclear weapons and ICBMs. He stressed that a retaliatory force had to be invulnerable to surprise attack -- survivable -- in order to deter it, and he specified just what constituted survivability: The surviving force had to have command and control capabilities intact under postattack circumstances, and had to be able to reach the enemy, penetrate enemy defenses, and destroy targets. Furthermore, once such a force was designed, procured, and deployed, constant vigilance would be needed to keep it survivable. Technology changes very quickly, and nuclear weapons give a great advantage to an aggressor. The current applicability of this classic of deterrence hardly needs to be spelled out.

Kissinger, writing in the context of what was believed to be an inexorably approaching missile gap in the Soviet Union's favor, not only made all the basic points about deterrence but made them in ways that are stunningly relevant twenty years later as the United States again sees, with much more solid evidence, approaching Soviet superiority.

Like Wohlstetter, Kissinger stressed that a constantly changing approach was necessary. There could be no settling into a static posture. He stressed invulnerability (survivability), and added the importance of nonprovocativeness in combination with invulnerability: A force that was invulnerable to surprise attack simply because it was so large that some of it was bound to survive would look threatening and would invite a preemptive attack. It was just as effective, and far less provocative, to achieve invulnerability by dispersal, hardening, and -- especially stressed by Kissinger -- mobility. He was in fact arguing for something like the projected (as of 1980) MX missile, as well as for submarine-launched missiles (SLBMs). At the same time, Kissinger pointed out the eternal fact of tradeoffs in developing and buying weapons -- for example, greater mobility means less effective command and control. To minimize the inevitable weaknesses and vulnerabilities of the various kinds of retaliatory forces, Kissinger recommended a mix, a suggestion that prefigures the strategic triad.

Kissinger stressed credibility. Again, this had been recognized from the beginning. Churchill had stated that strength must not only exist but must be communicated to the adversary. Kissinger hammered the point home. Credibility was basic. The absence of any civil defense efforts in the West undermined

credibility. The gap between deterrent policy and the strategy for fighting a war undermined credibility. "A threat is effective only if it is believed." (15) "Nothing is more urgent than to harmonize our deterrent policy with a strategy we are prepared to implement." (57) Kissinger was writing in the context of reaction against the "massive retaliation" approach of the mid-1950s. Twenty years later he would be saying much the same thing, and apologizing, in effect, for having taken a different position in the interim.*

Kissinger also attacked the problem of how much damage an invulnerable retaliatory force had to do in order to deter. "Unacceptable damage," clearly, but what, he asked, was that? As Churchill had, he acknowledged that a state-controlled society could probably accept more damage than a democratic society, that our threshold of unacceptable damage to population and industry was probably lower than that of the Soviet Union.

A large part of Kissinger's analysis was devoted to exploring the theoretical combinations of vulnerability and invulnerability in a bipolar adversary relationship. It is here that the theory of games influence appears strongest, that the work is most abstract, and that the results have seemed to cause the most problems when applied to the real world. Logically, if both sides were vulnerable,** the situation would be highly dangerous, with all-out nuclear war almost inevitable, because each side would be in the position of losing its missiles if it didn't use them against the other. The most stable situation would be for both sides to be invulnerable. The other possibilities would be moderately unstable, with temptations for one side or the other to carry out a surprise attack or a preemptive attack. (The chart below is adapted and simplified from Kissinger 1960:34)

	USSR Vulnerable	USSR Invulnerable
US Vulnerable	Highly unstable	Very low US deterrence against deliberate surprise attack
US Invulnerable	High US deterrence against all-out war	Mutual deterrence

*See newspaper accounts of Kissinger's Brussels speech of September 1, 1979.

**In the current essay the same shorthand Kissinger used is being used: Vulnerable means having a vulnerable retaliatory force; invulnerable means having an invulnerable (survivable) retaliatory force.

This analysis shows logically where the interests of both sides lie -- in mutual deterrence by invulnerable retaliatory forces. It is a useful tool for exposing those interests. In applying it to the real world, however, many factors have to be considered, including the two sides' differing perceptions of the real situation, and the differing extent to which they may wish to avoid war.

Assuming that mutual invulnerability would be achieved, Kissinger explored the problem of structuring and targeting the retaliatory force. Targeting could be either counterforce (against enemy strategic forces) or countervalue (against enemy population centers and industries). A strategy that employed only countervalue targeting was a finite deterrence strategy, a term reflecting the limited forces it required and implying a relatively static and permanent posture.* Kissinger weighed the advantages of counterforce strategy against finite deterrence and concluded that while counterforce is theoretically far better, it is almost ruled out for a country that renounces striking first, since there would presumably be few enemy missiles left for a retaliatory force to hit, and the retaliating country would need to put its surviving missiles where they would do the most damage -- against cities. However, he believed that some counterforce capability was necessary. Without it, our threat to retaliate would not be credible. It was not credible that a president would sacrifice millions of Americans for no military purpose. Some counterforce capability was necessary to deter "salami tactics" by the enemy -- picking off one submarine at a time, for example. Even with some counterforce capability, Kissinger believed that only a threat against the survival of the United States could be deterred by strategic nuclear forces. He discussed the suggestion sometimes made that uncertainty as to how the United States may respond will be enough to deter, given that it possesses a large, survivable force. Dubious about the effectiveness of uncertainty, he felt it was important to put strict limits on it. Uncertainty about exactly what we would do might be a good thing, but there should be no uncertainty that we would respond.

Kissinger presented the ingredients of effective deterrence in the form of a mathematical statement: deterrence depends on the magnitude of retaliation times the likelihood of retaliation.** If either is zero, the product is zero, and there is no deterrence.

*Finite deterrence is discussed more fully below, pp. 19-22.

**Intent and will are virtually equivalent to likelihood in this context, although this may not be immediately obvious.

(58) This equation appears in various forms throughout the deterrence literature. Force times will equals deterrence (Gallois 1961:109,164) and $D = FI$ -- where D is deterrence, F is the magnitude of the force, and I is intent (Seybold 1979) -- are two such expressions.

Finally, Kissinger stressed the importance of being able to fight limited war as a means of strengthening deterrence of all conflict and of providing an opportunity, should deterrence fail, for reaching a settlement before "the automatism of the retaliatory forces takes over." (59-60) In other words, Kissinger believed that the capability to successfully fight limited war provided the best deterrence for NATO and non-NATO allies, that it provided the best deterrence against other provocative and aggressive acts, and that it could effectively support strategic nuclear deterrence of attack upon the United States.

Essentials of Deterrence

What, then, is essential to achieve deterrence, as the classic concept developed in the period from the mid-1950s to the mid-1960s? The essential prerequisites will be presented here in an order that indicates the way in which they depend upon each other, that is, in a kind of architectural structure. Figure 1 shows the structure graphically.

The fundamental requirement is credibility. Clearly implied in the earliest literature, credibility began to be stressed as the essential prerequisite in the middle and late 1950s, in reaction to the "massive retaliation" pronouncements of 1954. Massive retaliation was an attempt to use strategic nuclear forces to carry out statecraft deterrence. As Dean Acheson wrote in 1958, "This forces us back to the essence of deterrence -- that the threat shall be credible." (47)

On what does credibility itself depend? First and indispensably on the perception of the opponent. The threat has to be credible to him. Deterrence is at its core a psychological phenomenon, a "matter of the mind." This was recognized early. Churchill stressed the importance of communicating Western capabilities to the Soviet Union. Much more recently, when Secretary of Defense James Schlesinger announced the selective nuclear targeting policy in 1974, it was said that he was not so much changing policy as making it clear and public that the United States had options other than assured destruction -- in other words, making an input to Soviet perceptions. (Sherman 1974)

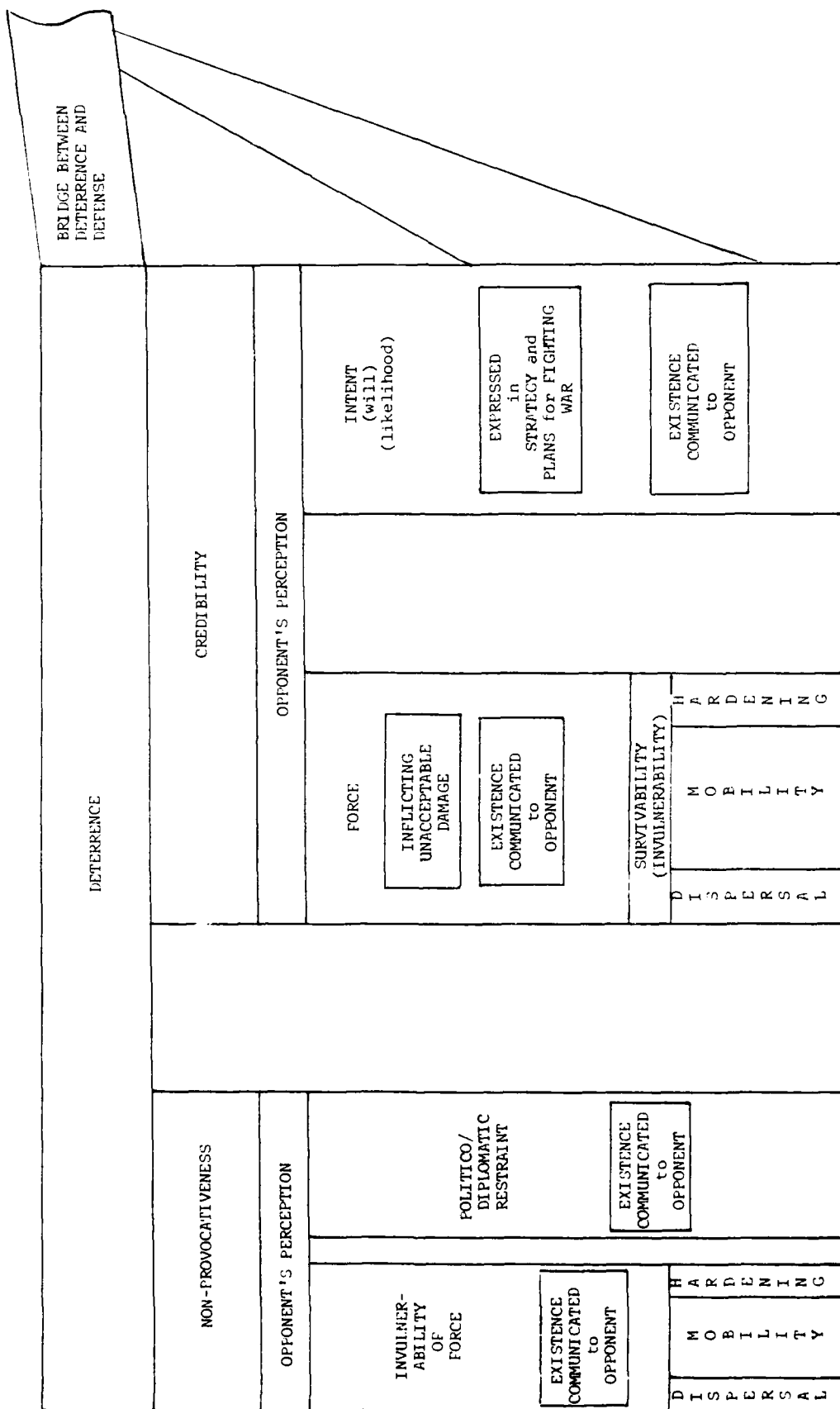


Figure 1. The structure of the deterrence concept.

One of the characteristics of deterrent thought in the 1970s, as will be discussed below, is more awareness of the complexity of Soviet perceptions, including a recognition that mere communication of the threat of dangerous consequences is not enough. Soviet reception of the communication is influenced by Soviet experience, power structure, and military culture.

Assuming that the deterrent threat can be perceived accurately, what are its essential components? We can visualize it as supported by two pillars. The first is the nuclear weapons force, which must be able to survive a first strike, and must be capable of inflicting damage unacceptable to the opponent. The second is the intent or will to retaliate. This will to retaliate must be expressed in the strategy and plans for fighting a war if deterrence fails. Even the largest force does not deter if the intent to use it is perceived as weak and if there are perceived to be no coherent strategy and plans for using it.

Even if all the essentials of deterrence are present, however, and even if the threat of disastrous consequences is credible to the opponent, deterrence theoretically can be undermined if the force is provocative through sheer overwhelming size or disposition. If the force looks like a first-strike, rather than a retaliatory, force, and if it makes a tempting target, deterrence may collapse as the opponent launches what he sees as a preemptive strike. What is sometime called "overdeterrence," in the sense of overthreatening an opponent (e.g. Albert 1972: 49-50) is not overdeterrence at all but rather a failure of deterrence as a result of provocative behavior or dispositions. A force may be made survivable without being made more provocative, through hardening, dispersal, or, especially, mobility.

Here then are the fundamentals of deterrence. It must be credible and nonprovocative. It achieves its credibility by effectively communicating to the adversary a powerful, survivable retaliatory force and the will to use it.

Deterrence is not, however, an isolated structure that stands or falls on how well it is put together. There has to be a bridge between deterrence and defense, between deterrence and what will be done if deterrence fails. Otherwise, credibility fails and deterrence in turn fails. This necessary link, the will and ability to follow through with action, was recognized very early. It was the lack of any coherent, believable strategy and forces for action that made the critics of massive retaliation condemn it in the 1950s. In the early 1960s forces and strategies were developed for limited war, and considerable work was done on planning for graduated response, intrawar deterrence, and the termination of war if general nuclear war did occur. However, limited war and graduated response suffered

a somewhat damaged reputation during the Vietnam war, and that war also absorbed energy and attention that might otherwise have been devoted to adjusting and updating strategic nuclear deterrence. In the later 1960s, strategic nuclear deterrence hardened into a static concept and posture that gave little attention to the capability to wage a nuclear conflict with the Soviet Union, if that necessity should arise. This may have weakened deterrence, but it did not invalidate the deterrence concept.

A Way of Looking at Deterrence Thinkers

In discussing the history of deterrence, it will be necessary to mention deterrence thinkers with varied points of view, and these thinkers have to be grouped into some kind of categories for reasonably clear exposition. All categories are arbitrary and misleading to some extent, but the ones most often used in discussions of public policy -- liberal and conservative, leftist and rightist, hawk and dove -- are extraordinarily so, and pose a formidable barrier to understanding the positions of thinkers and writers on deterrence.

The most useful taxonomy known to this author is that presented by Robert A. Levine in his 1963 book The Arms Debate, and it has therefore been adopted for this paper. Levine groups thinkers and writers on defense matters in a horseshoe-shaped array, stretching from "antiwar systemist" to "anti-Communist systemist." (Figure 2)

Two modes of classification are embodied in this diagram. Defense thinkers are classified as to their purposes as those primarily concerned with preventing war, especially thermonuclear war; those primarily concerned with arresting or reversing the expansion of Soviet communism; and those who do not fit easily into either group because they do not put either objective clearly above the other. Levine's terms -- antiwar, anti-Communist, and middle -- have the great advantage of dealing with real motivations, unlike such terms as left and right. They avoid the pitfall of suggesting that any serious US thinker on arms matters is prowar or pro-Communist. And they also have the virtue of simplicity.

The second mode of classification is by the degree of change in arms policy recommended by defense thinkers. Recommendations can be either marginal, that is, for small increments of change, or systemic -- for large changes affecting entire systems. As Levine points out, "radical" would be the more usual term for systemic, but the latter avoids the invidious connotations of the former.

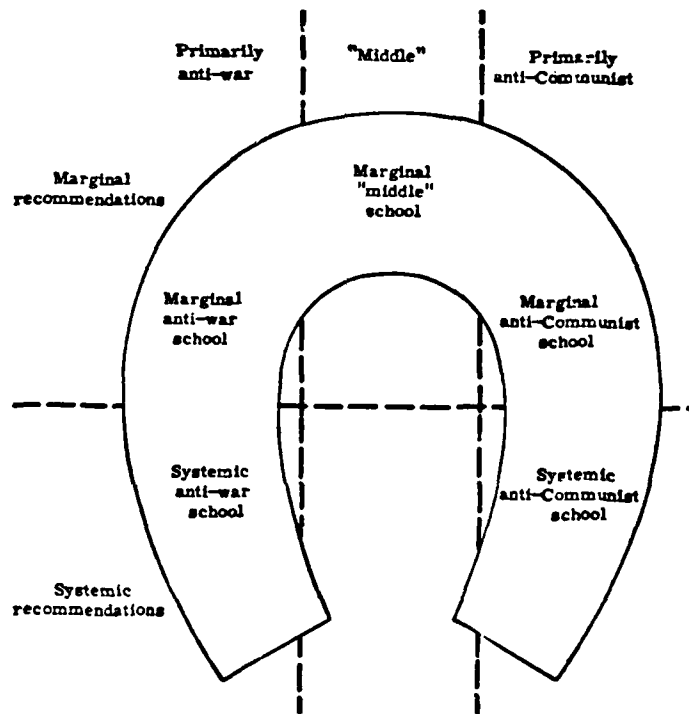


Figure 2. Levine's five schools of arms policy.
 Reproduced from Levine 1963:49.

As Figure 2 shows graphically, the two kinds of systemists, antiwar and anti-Communist, are close to each other in their absolutism, although diametrically opposed in what they feel is most important in defense policy. Between them are ranged the antiwar marginalists, the middle marginalists, and the anti-Communist marginalists, who have in common the fact that their recommendations tend to be based on compromise, gradualism, and recognition of the values of several different courses of action.

Although Levine does not apply his categories to thinking on deterrence, specifically, they work well in discussing it, and will be used several times in the remainder of this paper.

The Cyclic History of Deterrence

The hardening of deterrence into a static concept in the later 1960s may be seen as part of a cyclic pattern in the history of deterrence, in which finite deterrence has been followed by an emphasis on counterforce strategy, which in turn has been followed by a return to some form of finite deterrence.* Before discussing the cycles, it is necessary to say something more about the terms.

As indicated above (p. 14), strategic nuclear targeting policies may be classified, on the basis of what they intend to destroy, as counterforce or countervalue. Counterforce targets were originally defined as enemy strategic missiles, either unfired or still over their home country. The definition has since been broadened by some analysts to include all kinds of enemy military forces.** Countervalue targets have traditionally been defined as cities -- population centers and industry -- but would now be defined by some to be whatever the enemy values most, which might give such means of political control as the communications system more countervalue importance than large numbers of people. Counterforce strategies are those that make use of counterforce targeting in achieving deterrence, and in plans to wage nuclear war if deterrence should fail. Finite deterrence is usually used as the term for strategies employing countervalue targeting.

Counterforce Strategies. A counterforce strategy involves more than simply targeting Soviet forces. In the first place it is most suited for a first-strike strategy. A nation that wished

*Albert (1971:7) has pointed out the cycle phenomenon.

**This broadening of the counterforce concept has caused confusion. New terms are probably needed for strategic targets that do not fall in the classic counterforce or countervalue categories.

to launch a nuclear strike first, either as a surprise attack to eliminate an enemy or in response to extreme provocation and to alter an intolerable situation (a US response to a Soviet assault on Western Europe is the prime example), would presumably launch a counterforce strike. The enemy missiles would still be in their silos, the enemy could, theoretically, be disarmed, and his cities could be held hostage for his nonretaliation against the cities of the attacking nation. A nation that wished to use a counterforce strategy, or have it available for use, would also -- in the event, at least -- need to have some civil defense protection for its population, in case the enemy retaliated, and would want some kind of defense against enemy missiles (ballistic missile defense -- BMD), if possible. The force to carry out a counterforce strategy must have special characteristics: accuracy, the ability to destroy hardened targets, enough size to disarm the enemy and still have forces in reserve to hold cities hostage against the threat of retaliation by surviving enemy forces. The advantages of a counterforce strategy are its flexibility -- few or many targets of various kinds can be attacked; its believability as a deterrent and utility in war; and its relative sparing of noncombatant lives. The chief disadvantages are the great expense required to create a counterforce force; the impossibility of striking many counterforce targets if one strikes second, after a massive enemy strike, when many or most of the enemy missiles have already been fired; and the provocativeness, in the eyes of some analysts, of such a strategy. This last point will be discussed further below, under finite deterrence.

Finite Deterrence. Finite deterrence by its name implies a static, limited approach to deterrence, and it seems fair to say that this is what its advocates favor. This approach seeks as small a retaliatory force as can produce deterrence. Its targeting strategy is therefore generally countervalue, since it is presumably by hitting cities that one can do -- or threaten -- the most damage with the fewest weapons. Finite deterrence is mutual deterrence, and its theoretical foundations are in the concept represented in the chart on p. 13. If both sides in a bipolar adversary relationship have invulnerable retaliatory forces capable of doing unacceptable damage to the opponent, neither can attack. This is theoretically the most stable and theoretically the most desirable situation. Even if one side has many more weapons than the other, if the inferior side has an invulnerable force capable of doing unacceptable damage it can still deter its opponent. Deterrence is still symmetrical, even if the size and quality of the forces is highly unequal.

The advantages of finite deterrence are its relatively low cost and the promise it seems to hold out that deterrence can be established and then forgotten about, allowing the nation to

focus on other matters. It may be said without flippancy that it is an approach that appeals to people who do not feel either threatened or expansionist, that is, to most Americans. It is at least superficially the most satisfactory approach from a purely logical point of view, assuming that both opponents share the opinion, so evident in the early deterrence writings, that stalemate, symmetry, and stability describe the most desirable situation.*

The influence of the theory of games can probably be seen in the finite deterrence approach. From a simplistic point of view, the theory of games seemed to promise that, if the United States assumed the "worst case" -- a direct nuclear attack on this country -- and followed a strategy that would theoretically enable it to deter such an attack (by the capability of doing "unacceptable damage" after such an attack), then no matter how many missiles and warheads the Soviets deployed, no matter how great their conventional weapons buildup, there was no way in which the United States could improve on its position, and the Soviets were merely wasting money and effort by trying to. To reason this way, however, is to distort seriously what the theory of games says. The minimax strategy guarantees that one will lose as little as possible, over the long run, given the resources each side possesses, in a zero-sum game. However, if one side greatly increases the strength it can apply to the game, the other side is likely to suffer. The theory of games does not deal with the matter of relative strengths.

The weaknesses of finite deterrence begin with the fact that it requires a survivable force that can do unacceptable damage, and that, while this can be a finite force, it cannot be an unchanging force unless one's opponent cooperates. If one's opponent does not accept the view that symmetry is best for both sides, it may find ways of making one's retaliatory force vulnerable and may also take measures to protect its value targets to such an extent that unacceptable damage cannot be done them. Unless the situation is remedied, the opponent can then launch coercive attacks and at the same time withhold forces that deter one's deterrent (Nitze's phrase, 1976). Of course it is true of all deterrence, not just finite deterrence, that it must be constantly adapted to changed situations. (See, for example, Kissinger 1960:24) However, advocates of finite deterrence tend to deny, forget, or ignore this reality, and the fact that it vitiates one of the apparent advantages of the finite deterrence approach.**

*In reading the summaries of 1950s writings in Brody (1960), one is struck by this recurring theme.

**For an extreme example, see Hohenemser (1974).

Protecting Soviet Invulnerability. The fundamental weakness of finite deterrence, implied above, may be stated plainly: If it is to work, both sides must embrace symmetry. Neither side can tamper with the invulnerability of the other's retaliatory force. This rule, as it has been adapted by US advocates of finite deterrence, has meant not simply recognizing that mutually invulnerable retaliatory forces produce the most stable situation, but actively seeking to protect the invulnerability of the adversary. Oskar Morgenstern, writing in 1959 (Gallois 1961:53), outlined the reasoning behind the belief that it is actually to the interest of the United States for the Soviet Union to have an invulnerable retaliatory force: A false alarm of a nuclear attack could force a state without a secure retaliatory force to fire off its missiles, whereas a state with a secure retaliatory force could ride out the hypothetical attack, could wait and see. Thus if the Soviet Union had a secure retaliatory force, accidental war, and the destruction of the United States, could be avoided.

Herbert Scoville (Scoville and Osborn 1970:16) implies that this kind of symmetry is an essential aspect of deterrence:

What, then, can be done when the elimination of these weapons appears beyond the realm of immediate possibility and when protection cannot be obtained by physical means? Reliance must be placed upon DETERRENCE. Nuclear war can be prevented today only by making the consequences of its initiation clearly unacceptable to all parties. Each nation must unequivocally understand that the other, even after suffering the maximum conceivable surprise first-strike, can nevertheless produce an unacceptable level of "assured destruction" in retaliation. . . . Only if a mutual second-strike capability is absolutely clear to both parties will there be reasonable confidence that neither nation would consider initiating nuclear war.

It should be noted that not only the deterrence, but all the basic, implicit assumptions of this point of view are symmetrical. The writer, in the interests of preventing a human disaster, is looking at the situation from the point of view of both antagonists, and is deciding what would be best for both of them. He then recommends that one of them carry out this policy, in the interest of both, and of humanity. This approach does not adequately take into account even such basic factors as the asymmetry of goals of the United States and the Soviet Union--the difference between a status quo power and an expansionist, or at least actively revisionist, power.

It is not just Scoville and the antiwar marginalists of the Federation of American Scientists who have advocated a protective attitude toward Soviet invulnerability. According to Fred Ikle (1973:277), the shift in US policy to mutual assured destruction after 1963 was motivated largely by the US defense and arms-control establishment's view that if we denied ourselves defense against Soviet forces and curtailed our ability to hit Soviet forces, the Soviets might be expected to reciprocate and we could thus achieve stability and prevent more arms buildups by both sides.

The decision not to seek protection for the US population at the same time that we were taking care not to make Soviet missiles vulnerable to our attack should be noted. A comparable proposal by advocates of finite deterrence is to deal with the problem of the vulnerability of US ICBMs to Soviet attack (a vulnerability arising because the Soviets have not in fact reciprocated by protecting our missile invulnerability) by phasing them out. The reasoning is that once the Soviets have made these weapons vulnerable they then become a tempting target for a Soviet first strike, and we should remove them.*

It thus might be fairly said that finite deterrence has given deterrence a bad name. Advocates of finite deterrence have tended to equate the two. The influential and attentive publics have been encouraged to make this same assumption by the fact that US deterrence policy during the late 1960s and early 1970s appeared to be a finite deterrence policy. However, it is not true that deterrence equals finite deterrence. Although the deterrence theorists saw mutual invulnerability of retaliatory forces as the most stable and therefore most desirable situation for both sides (e.g., Kissinger 1960; Schelling 1960), there was never any conclusion, nor could there be one, that this was the only kind of deterrence. For the United States to achieve deterrence, it had to have an invulnerable retaliatory force, credibly capable of doing unacceptable damage, the credible will to use it, and nonprovocative force dispositions. The requirement to protect the Soviet Union's retaliatory force, or to avoid having a vulnerable retaliatory force by simply dismantling a large part of the force, or to insure that one's own population was defenseless against attack, were not seen as a part of deterrence in the early writings (before 1963). On the contrary, deterrence was seen by its great explicators as requiring constant vigilance and change, and requiring the real and perceived ability and will to wage nuclear war if deterrence should fail. The basic theme of Kissinger's The Necessity for Choice was that Americans had to give up their illusions that their country's survival, much less its security, could be achieved without much effort.

*See Washington Post story on Federation of American Scientists report, January 27, 1974. See also Hohenemser (1974).

Chronology of Deterrence Cycles. Even the most general chronology of deterrence is difficult to construct without distortion, because one is dealing with both deterrence theory and US official deterrence policy, and the two do not always coincide. For example, there was apparently never any real theoretical underpinning for the policy of massive retaliation. However, the shifts can be roughly charted in the following way. (Figure 3 illustrates the following historical summary, and Figure 4 displays the relationship in time between some landmarks in deterrence theory and some in deterrence policy.)

The policy of massive retaliation, announced in 1954, called for US response to Communist-nation provocations of all kinds with whatever actions the United States deemed appropriate to its interests, whether or not these responses matched the provocations as to geographical location or weapons systems. The response could include a nuclear strike, whether or not the provocation was nuclear. By implication, US nuclear superiority was to be used to deter all kinds of aggressions. Massive retaliation was a kind of finite deterrence, in that it assumed countervalue targeting, a minimum amount of force in being, and a relatively static defense posture.*

The developing deterrence theorists responded to massive retaliation with a much less simplistic, more complex approach to deterring aggression. The flexible response policy of the Kennedy administration included a build-up of conventional forces for statecraft deterrence and careful planning for the use of strategic weapons, if strategic nuclear war should come, in ways that would control damage to the United States and bring the war to an end as soon as possible. US retaliatory-force invulnerability and nonprovocativeness were stressed. Counterforce targeting was part of this planning, and Secretary of Defense McNamara supported counterforce strategies until 1963. The reasons for their abandonment are not entirely clear, and in fact the capability to deliver counterforce strikes was probably never abandoned.

The shift in policy was probably due largely to two causes: the hope that the Soviet Union would adopt a complementary finite deterrence posture, thus stabilizing the arms race and providing theoretically stable nuclear deterrence; and the great expense of achieving the capacity to destroy increasingly invulnerable Soviet strategic forces. The expense problem increased as the Vietnam war consumed more and more defense funds, and the symmetrical

*The author recognizes that many finite-deterrence advocates (Lowe 1964, for example) would not agree with this classification of massive retaliation. It is true that, unlike later forms of finite deterrence, it did not call for symmetrical mutual deterrence.

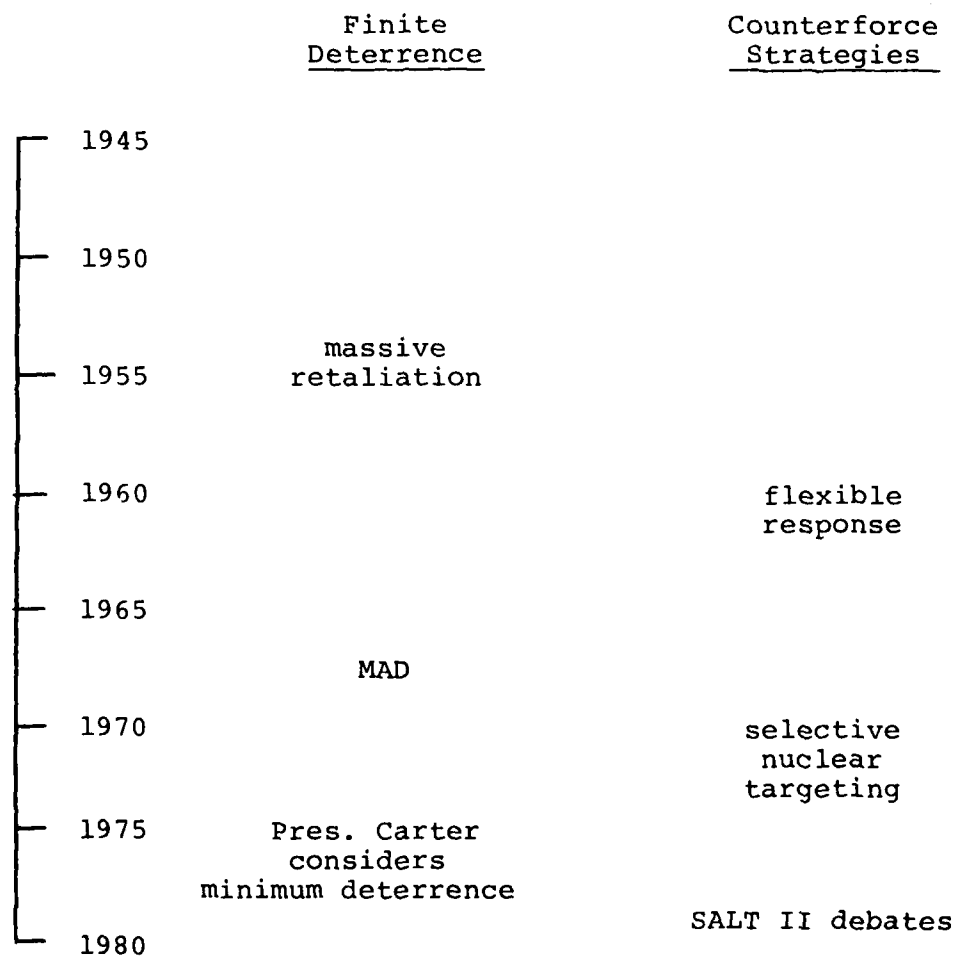


Figure 3. A rough chronology of deterrence cycles.

Year	Arms Development	Event	Theory	Policy
1945	US A-bomb	Hiroshima & Nagasaki		
	Soviet A-bomb	Czechoslovakia; Berlin blockade	Brodie: Nuclear weapons can prevent use of nuclear weapons; invulnerable retaliatory force for deterrence; civil defense [George Kennan's "Mr. X" article: Containment of communism as US national strategy]	
1950		Korean War		
	US H-bomb			
	Soviet H-bomb			
	tactical nuc. weapons	Dien Bien Phu; Geneva Conference		"massive retaliation"
1955		Arab-Israeli War; Hungary	Churchill speech: mutual deterrence, deterrence to protect Europe	
	Soviet ICBM "missile gap" issue raised			
1960	SLBM Polaris tested		Wohlstetter: "Delicate Balance of Terror": Complex requirements for deterrence; Morgenthau: Soviet invulnerability is in US interest Kissinger; Necessity for Choice: credibility; invulnerability plus nonprovocativeness; mutual invulnerability gives greatest stability	Kennedy: US must have survivable 2d-strike force to deter attack on US or ally McNamara, June, Ann Arbor: Counterforce targeting, conventional build-up, flexible response; Oct.: assured destruction: 2d-strike force that can do "unacceptable damage"
	Soviet reported hardening ICBMs			
1965		US escalation in Vietnam		
	US Air Force test-launches its first MIRV			
		Czechoslovakia	Defense community studies on selective nuclear targeting	McNamara strongly opposes ABM, supports mutual assured destruction Nixon: "realistic deterrence"; "self-help at lower edge of spectrum"; strategic efficiency
1970				
	Soviets pass US in total strategic missile launchers	SALT I; US Vietnam pull-out	Ikle: Strongly rejects MAD, advocates selective and flexible targeting	
1975	First operational Soviet MIRVs	South Vietnam falls; Angola		Schlesinger: selective nuclear targeting
1980		Iran; SALT II Afghanistan	Gray: Favors deterrence through ability to wage war effectively; favors adopting a theory of victory	Countervailing strategy: response against wide spectrum of targets plus survivable retaliatory force to inflict assured destruction

Figure 4. Deterrence theory and policy: their relationship in time.

finite-deterrence stance of what is now generally called mutual assured destruction became hardened and static.*

Under MAD, the United States offered a situation in which each side would have an invulnerable retaliatory force capable of carrying out the assured destruction of a given fraction of the adversary's population and industry, a fraction assumed to represent an unacceptable loss. (Twenty percent to 25% of the population and 50% of industry are the figures most often given.) Civil defense and ballistic missile defense were to be renounced by each side. It was never part of MAD doctrine that only population centers and industries were to be targeted; the death and destruction percentages were ways of measuring the destructive capability of the retaliatory force, not necessarily goals for destruction. However, the renunciation of civil defense implied that US cities were being offered as hostages guaranteeing no US attack, and reciprocation was expected from the Soviet. Secretary of Defense McNamara's strong and public opposition to ABM (anti-ballistic missile) deployment probably did more than anything else to crystallize the concept the attentive public had of deterrence as equal to finite deterrence, with mutual assured destruction the operative deterrent threat and vulnerability of populations a necessary part of effective deterrence.

About 1970, with the coming of the Nixon administration, the literature of the deterrence analysts, most of it unpublished except within the defense community, began to call again for flexible targeting, and to suggest various counterforce strategies and combinations of counterforce and countervalue targeting. This movement culminated in Secretary of Defense Schlesinger's announcement of selective nuclear targeting in 1974. Since that time there has been a small epicycle whose turn toward finite deterrence took place when President Carter, just before he took office, called for a study of the feasibility of relying on some 200 or 250 strategic nuclear delivery missiles (Hoeber 1978:53), and in general appeared under pressure from advocates of finite and minimum deterrence. However, the trend quickly turned away from finite deterrence. The approach of the SALT II ratification debates, and the SALT Congressional hearings themselves, have elicited a considerable body of writing favoring counterforce capabilities. These recent developments will be further discussed below ("Deterrence Thought in the 1970s").

*Reciprocal assured destruction would be a more objective term, with a less pejorative acronym. The term mutual assured destruction seems to have been coined by opponents of the policy.

Deterrence for Europe

From Churchill's 1955 speech to the House of Commons to Kissinger's 1979 speech in Brussels, the use of US nuclear power to protect Western Europe from Soviet attack has been a persistent and increasingly troubled theme. The problem is broader than the security of Europe alone, including the whole matter of "extended deterrence" (see Dornan 1979:209-10) for all countries to which the United States has treaty obligations. Europe, however, reveals the essence of the problem, as a region immediately facing superior Soviet and Eastern European strength and a region whose independence is so intimately involved with US values and interests that this country has fought two wars in its defense -- or so it may be strongly argued -- even without treaty obligations.

Churchill suggested that US nuclear power would compensate for the inferiority of NATO conventional forces, at the same time that it was deterring Soviet nuclear attack against the United States, and Dulles's massive retaliation pronouncements of the previous year had also claimed this all-purpose role for US deterrence. However, when the first Soviet ICBM was launched (1957), and it became clear that the United States was readily accessible to direct nuclear attack, it was less clear that US nuclear strength could be counted on to protect Europe. The French decided to seek an independent deterrent force, believing, as General Pierre Gallois cogently explained (1961), that nuclear weapons could be launched only in defense of an absolutely vital interest, to ensure one's country's survival, and that the United States could not be expected to stand ready indefinitely to launch such weapons in defense of Europe.

President Kennedy, in his 1961 budget message, made an authoritative statement of US deterrence policy that reiterated the commitment to NATO and other allies:

Our strategic arms and defenses must be adequate to deter any deliberate attack on the United States or our allies -- by making clear to any potential aggressor that sufficient retaliatory forces will be able to survive a first strike and penetrate his defenses in order to inflict unacceptable losses upon him. (Coffey 1963:4)

This is a clear statement of the requirements for deterrence: a survivable force capable of doing unacceptable damage. However, as Joseph Coffey pointed out, it does not solve the problem of "rendering credible our intent to respond to attacks on our allies, when such response involves initiating a thermonuclear war." Coffey could have bluntly said that there was an internal inconsistency in Kennedy's statement that we would deter an attack

on our allies because we could survive a first strike and inflict unacceptable losses. Suppose our allies were attacked and we were not? Then there would be no question of our surviving a first attack. We would have to make a first attack. Would we? Could it be a disarming strike? If not, would we strike Soviet cities and invite the destruction of our cities? Or would we strike at as much of the Soviet force as possible and be prepared to ride out a countercity attack and still have forces left to inflict unacceptable damage? This last alternative, a counterforce strategy, would appear most reasonable in action and convincing as a deterrent, and although it is not what Kennedy said in 1961, we know that the Kennedy-McNamara administration was moving in that direction. However, it was a very expensive course, and the trend toward finite deterrence in the form of MAD set in within two or three years.

The problem of Europe's defense did not go away. The Kennedy administration's approach to deterrence called for upgrading conventional forces to deter conventional attack, and NATO countries were urged to provide more such forces for their own defense. But this raised another problem, especially in the minds of some European leaders. If NATO was stronger conventionally, would the United States be less likely to use its strategic nuclear forces to protect it? Would the Soviet Union perceive that this was so, whether it was or not, and thus be more likely to attack? Tactical nuclear weapons also posed a problem in Europe. Could they be used to compensate for conventional inferiority without bringing on a strategic nuclear war? In 1969, Thomas Schelling said, in Congressional testimony,

There are . . . areas of strategic thinking in which we have made very little progress during the past decade. One is an old problem, and the lack of progress is not due to lack of trying. It is how to couple our strategic retaliatory capability and our regional defense capability in a meaningful doctrine.

The question whether the tactical use of nuclear weapons must lead, or needs to lead, to total escalation is not one on which any of us seems closer to a persuasive answer than ten years ago. The question whether a conventional capability in Europe or elsewhere enhances the strategic deterrent, by promising timely and unflinching response, or degrades the strategic deterrent by providing evasive alternatives, is one that the American government and some European governments argued to a standstill. (Albert 1972:33)

Behind these questions of the role of tactical nuclear and conventional weapons remained the central question of deterrence

for Europe: Will the United States strike first with strategic nuclear weapons to defend Europe? Iklé, in 1973, pointed out the incompatibility of symmetrical mutual deterrence, based on mutual assured destruction, with strategic deterrence as a shield for Europe:

Our current strategic posture is afflicted by a deep but strangely concealed contradiction. Those of our forces that serve to protect our NATO allies are still largely designed and operated in accordance with the earlier strategy threatening, in response to a major conventional attack, a nuclear first strike that would seek to disarm [a counterforce strike]. But our global deterrence posture now has to meet the opposite requirement: to eschew, and through agreement mutually to preclude, a nuclear disarming capability. (Iklé 1973:277-78)

One of the chief purposes of the Schlesinger doctrine of selective nuclear targeting, enunciated in 1974, was to make some kind of strategic nuclear initiatives in defense of NATO credible. Even though the United States could not expect to disarm the Soviet Union with a first strike, and thus could not use such a threat to deter attack on Europe, it could pose the threat of limited nuclear strikes against military targets in the Soviet Union that would cause damage outweighing what the Soviets might hope to gain in Western Europe.

But would the United States actually launch such attacks and bring down Soviet attacks on its people? And if it would not, would the threat to do so be credible? And without credibility, how could there be deterrence? Kissinger's remarks to leading Western European military specialists in September 1979 put the matter as clearly and bluntly as possible: "Don't you Europeans keep asking us to multiply assurances we cannot possibly mean and that if we do mean, we should not want to execute, and which if we execute, would destroy our civilization."*

Kissinger called for the development of a new counterforce capability, and took responsibility for having himself contributed to the theories of the past that he was denouncing.** It is true that Kissinger had argued for MAD, in supporting the anti-ABM agreement of SALT I, saying that as long as the offensive missiles of each side had "unchallenged access" to the population centers of the other, deterrence was assured. (Dornan 1979:216) In doing so, he had ignored his own advice of 1960 that absence of

*New York Times, September 2, 1979, p. 8.

**Los Angeles Times, September 2, 1979, p. 4.

civil defense, and of a bridge between deterrence and war-fighting capability, undermined credibility and thus undermined deterrence.

Certainly MAD was, in retrospect, a completely illogical choice for a nation like the United States with far-flung alliance responsibilities. Being a close, finite, symmetrical system of mutual deterrence, it was incapable of being extended by the United States to include deterrence of attack against NATO. When it became clear that the Soviet Union was not cooperating in the MAD system, so that even the deterrence that system had seemed to promise -- deterrence of direct attack against the United States -- was not permanently ensured, a time for changes had come.

The Deterrence Concept in the 1970s

A number of factors have influenced the deterrence concept during the past decade. They may be summarized as these:

- A return of the attention of the defense community and the attentive public to deterrence, and specifically strategic nuclear deterrence, following the end of the Vietnam war.
- An increasing awareness of a consistent and massive Soviet buildup in conventional and nuclear weapons and forces, beginning in the early 1960s.
- An accompanying awareness that Soviet leaders did not share US views on deterrence and were not cooperating in maintaining stable, symmetrical nuclear deterrence.
- The examination of the US defense posture and capabilities brought about by the SALT II negotiations and ratification debate.
- An increasing concern about the moral implications of attempting to prevent nuclear war by assuring the death of scores of millions if deterrence should fail.
- Attacks on the validity of deterrence, both from the "antiwar" end of Levine's spectrum and from the anti-Communist end.
- The development of selective nuclear targeting (SNT) to provide more US options than simply a strategic nuclear spasm or no response, and to communicate these options to the Soviets.*

*Selective nuclear targeting has been chosen for this paper in preference to the more commonly used limited nuclear options, and to flexible options. The terms are not synonymous, although they are often used interchangeably. SNT seems most accurate for most purposes and least easily confused with other, similar-sounding terms.

To these might be added a trend much less pronounced than the others, but evident in some French and British writings, especially, toward concern over whether the Western democracies have the will to support adequate defense establishments and to fight a war for their ultimate values if necessary.

These factors will not be discussed one by one; in some cases their existence and influence appear self-evident, and they are listed only to call them to the reader's attention. Some, however, will be treated more fully.

The Moral Absurdity of MAD. The threat of mutual assured destruction of huge parts of the Soviet and US populations as a technique for preventing war has always been a paradox. It seemed odd that the taking and yielding of millions of hostages could be the most humane way to deal with the threat of nuclear war. To those who thought about it, it also seemed odd that the United States would choose to cancel out the power of the one class of weapons in which it was still superior in the 1960s. And considering our alliance obligations, it might seem odd that we would, in effect, sign a mutual nonaggression pact with the Soviet Union and use the lives of several million American citizens to guarantee it. (See Kahn, 1960:40) But paradoxes can express truth, and it was believed that this one did: Assured destruction of each other's societies in case of attack would prevent such an attack and thus offer the most humane program for saving lives, while attempting to save lives by civil defense, ballistic missile defense, or planning strikes against enemy weapons would make war more likely and would be ineffective in saving lives if war came.

However, in the middle 1970s a strong reaction to the moral implications of assured destruction was setting in. As Iklé put it, "Tomas de Torquemada, who burned 10,000 heretics at the stake, could claim principles more humane than our nuclear strategy; for his tribunals found all his victims guilty of having knowingly committed mortal sin." (Iklé 1973:281) Henry Rowen, writing on proliferation, spoke wryly in passing of a strategic model which assumes that "only the prospect of civil devastation is stabilizing" and that "at least one and preferably each of the governments should commit itself to a policy of national suicide."* Colin Gray has recently forcefully pointed out the logical as well as the moral absurdity of the approach, asking how we can plan to make an assault that would be mere revenge if it came second and would bring on our destruction if it came first. (Gray 1979:55)

*In Albert Wohlstetter et al. (1977), "The Military Potential of Civilian Nuclear Energy: Moving Towards Life in a Nuclear Armed Crowd?", Minerva 15:516.

Soviet Buildup and Attitudes. It seems unlikely that without the attention-consuming and funds-absorbing war in Indochina, the MAD approach to deterrence could have remained so long firmly ensconced, in view of the vigorous Soviet buildup. The awareness of the buildup, that it was indeed a push for superiority and not merely a catching up with the United States, plus the concurrent and corollary awareness that the Soviet Union was not buying the mutual deterrence program offered by the United States, have had a variety of effects.

Some members of the influential and attentive publics do not recognize any problem, feel that the United States has been as provocative in weapons procurement and deployment as the Soviets, feel that Soviet superiority is insignificant and only a waste of Soviet money as long as the United States has enough missiles to ensure unacceptable damage, and see no need for a change in deterrence posture from the mutual assured destruction of the late 1960s.* Although Colin Gray (1979:72) states that MAD in any pure form has been virtually abandoned by those in the defense and arms control communities, there seems to be a good deal of it left in Congress and among the influential public, including academic people.

Another group, more articulate, with more specialized knowledge, and composed of people who would fall in the anti-Communist marginalist portion of Levine's spectrum, believe it is urgent that the United States respond with an upgrading of its military capabilities carefully designed to meet the Soviet threat. As Gray says (1979:62), this group is "edging toward" the idea that the utility of nuclear weapons in nonuse, which is truly at the heart of nuclear-age deterrence, is a wrong idea, and may have had a deleterious effect on Western security. Gray (1979), Richard Pipes (1977), and Paul Nitze (1976) have effectively set forth variants of this point of view.

One specialized response has been greater and more sophisticated efforts to discover just what Soviet perceptions of deterrence and defense are, including a return to some of the work that was done in this area in the 1950s and then neglected.** What has emerged is an understanding of a Soviet concept of deterrence that equates deterrence with the ability to fight and win a general nuclear and conventional war. What could deter more effectively, the Soviet leaders ask, than "an imposing offensive arsenal backed up by the best possible active and passive defenses?" The Soviet

*See, for example, New York Times editorial, "Arms Control Out of Control," August 15, 1979; Morgenthau 1979.

**See discussions and citations of the work of Herbert Dinerstein and Raymond Gartoff, Pipes 1977:27, 27n.

leaders are not concerned with protecting the survivability of the US retaliatory force, or with the other requirements of symmetrical mutual deterrence. For them, deterrence is deterrence by the Soviet Union, and deterrence is enhanced when Soviet power is strengthened.*

Clearly a new US view of deterrence, an adjustment of the concept and the strategy, is required. Deterrence was a Western concept that developed out of an awareness of the enormity of nuclear weapons and also out of great Western, and specifically US, superiority in these weapons. It developed into a symmetrical, mutually deterring and mutually protecting model suited to approximate equivalence in nuclear strength of bipolar adversaries, and was offered to the Soviet Union in this form. The model did not fit Soviet perceptions of what Soviet protection called for, and was not accepted. It is not logically impossible, and should not be practically impossible, to continue to use nuclear weapons to deter the use of nuclear weapons, but it cannot be a deterrence based either on superiority or on equality plus a mutual agreement that each side will retain the unimpeded power to ravage the other's population.

Selective Nuclear Targeting (SNT). The chief policy response for buttressing deterrence in the 1970s has been the approach of targeting available strategic forces in such a way that a limited counterforce strike, or strikes, could be made in response to a provocation less extreme than direct attack on the United States. The search for new targeting options began in earnest early in the Nixon administration, and was especially encouraged by Kissinger, then National Security Adviser. The new policy was crystallized in NSDM (National Security Decision Memorandum) 242 and presented to Congress and the public in 1974 by Secretary of Defense Schlesinger, who, while on the Rand Corporation staff, had done early work on the new targeting options. (Schlesinger 1968)

A good deal of thought within the defense community has gone into choosing the appropriate targets. Counterforce and countervalue targeting categories have become somewhat blurred; most targets can no longer easily be classified as one of the other. With Soviet silo missiles largely hardened, and thus making less rewarding targets, the understanding of counterforce targets has been broadened to include military forces of all kinds. Instruments of the Soviet government's control over the country, such as the rail connections with Soviet Asia have been cited as appropriate targets. (Albert 1971; Sherman 1974)

*Snyder 1977:11; Howard 1979:975-86. Quotation from Snyder. See also news story quoting Andrew Marshall, San Francisco Chronicle, July 29, 1979, p. B6.

Assured destruction, i.e., countervalue targeting, was to remain a capability. Schlesinger's approach, which also called for research and development of new weapons systems, was attacked in the press and Congress -- as the "Schlesinger doctrine" -- for making nuclear war more feasible and thus weakening deterrence. This criticism ignored, and probably was ignorant of, the fact that counterforce strategies had been a part of deterrence theory since the 1950s; that the symmetrical, "stable," mutual deterrence model is only one possible deterrence strategy; and that the believable bridge from deterrence to action has been viewed as an essential requirement of effective deterrence almost from the beginning. The key reason why SNT should produce more effective deterrence than MAD is the unbelievability that what is threatened in MAD would be carried out under any conceivable circumstances.

It may be mentioned here that one response of the 1970s to the Soviet buildup and implicit rejection of MAD has been a move toward a "launch on warning" policy. This means that if our ICBMs are becoming vulnerable, we will behave the way a vulnerable power is in danger of behaving under the theory of games model of vulnerability (see p. 13) and use, rather than lose, our missiles. (Iklé 1973:274-76)* The possibility that we might do this could indeed make a Soviet attack less likely, but the policy would make accidental war dangerously more likely and would compound the moral problem by ensuring the destruction of Soviet cities whether or not a Soviet attack had actually been launched. It does not appear to be strongly supported within the defense community.

Attacks on Deterrence from the "Antiwar" Side. There has been some discussion above, in the section on Soviet buildup and attitudes, of recent criticism of deterrence itself by some strongly defense oriented analysts. Mention should also be made of the strong criticisms of the deterrence concept from the antiwar (in Levine's model) side of the spectrum, most of them in the form of scholarly studies by members of the academic community. For discussion of several such works, the reader should see the bibliographic entries on George and Smoke 1974, Naroll et al. 1974, Morgan 1977, and Steinbruner 1976. In general, these works do not deal with strategic nuclear deterrence, but rather with statecraft "deterrence." Some attack the theory-of-games underpinning of much of the "golden age" refinement of deterrence theory. Some, notably George and Smoke's work, are of much more value than others, but it seems safe to say that none of them threatens the validity of the strategic nuclear deterrence concept.

The Societal Dimension. Michael Howard, in a recent article, has pointed out that the societal dimension of strategy stressed by Clausewitz, the will of the society to support the military effort,

*Iklé lists advocates of the policy, which he rejects.

has been undervalued and in fact virtually unnoted in recent years. (Howard 1979) He suggests that MAD doctrine was a rationalization for abandoning the civil defense programs that people in some Western countries, and especially the United States, were unwilling to accept because of their expense and their disruptive effects. He then points out the irrationality of contemplating initiating nuclear operations, as we would probably have to do in response to any Soviet attack on NATO, without preparations for protecting our societies. Howard also points out the necessity for society's support of military preparedness: "The maintenance of adequate armed forces in peacetime, and the will to deploy and support them operationally in war, is in fact a symbol of that social unity and political resolve which is as essential an element in nuclear deterrence as any invulnerable second-strike capability." (Howard 1979:983)

Another English student of Clausewitz, R.A. Mason, also writing in 1979, has suggested that the West's center of gravity, in the Clausewitzian sense, its center of strength against which a shrewd opponent would direct his energies, is "not in our military strength, conventional or nuclear, but in the fundamental nature of democratic Western society or in the sources of economic power that sustain it," and that the shrewd opponent might attack our public opinion on the one hand and . . . the heart of our internal and external economic resources on the other."*

The SALT II debate in the United States has had some impact in bringing public attention and strategic concepts closer together, but there still seems a very large gap between the making of decisions within the defense community and the minds of the people who will be called upon to support them.

Conclusions

After 33 years the deterrence concept has shown itself, not surprisingly, open to attack from several points of view. Deterrence strategy has been revised, and will need further revision. However, the circumstances that created deterrence have not changed. Strategic nuclear weapons are still so destructive that avoiding their use is profoundly important, and the basic deterrence concept appears valid and strong. Most of the criticisms of deterrence are aimed at distortions of it that have neglected its essential elements, elements implicit from the beginning and clearly articulated by 1960.

*"The Challenge of Clausewitz," Air University Review 30 (March-April 1979):76.

- Deterrence requires, above all, credibility, and there can be no credibility without a believable link between the deterrence posture and the action that will be taken if, despite that posture, the other side attacks. The threat to kill 25% of the Soviet population while the US population is exposed to attack lacks that link between threat and action.

- Deterrence requires an invulnerable retaliatory force, and cannot remain effective if the US retaliatory force becomes vulnerable to a Soviet first strike.

- The retaliatory force has to be capable of doing unacceptable damage, but unacceptable damage, like the other components of deterrence, is dependent on the opponent's perception. Thus effective deterrence depends on a highly informed appraisal of what is of value and utility to the opponent's leadership, and a careful structuring of the now-limited retaliatory forces to target those values and forces.

- Deterrence, for the United States, has to be consistent with commitments to allies. Thus it must either be believably extended to include nuclear strikes against any state that attacks US allies or it must be backed up by other provisions for defending them.

- Deterrence cannot be static. It requires constant vigilance, and adjustment to changing technology, changes in the balance of forces, and changes in the international system.

- Deterrence requires the will of leaders and society to provide the forces required for an effective deterrent threat and the intent to follow through with action, even at great risk and sacrifice, if deterrence should fail.

BIBLIOGRAPHY

Introduction

This paper is focused on the concept of deterrence, and an attempt has been made to keep the bibliography focused in the same way. Theoretical explorations of the nature of deterrence have been included, and also somewhat more practical explorations of strategies that may make deterrence work better. Works discussing specific weapons systems and their role in deterrence have not been included, although a number of them have been read. Highly theoretical works on decision making and conflict resolution generally have not been included.

For annotations to be useful, judgments have to be given. A strong effort has been made to be fair. It is almost impossible, and a disservice to the reader, not to argue ad hominem to some extent, in the sense of taking into consideration an author's other writings, his apparent--even if unspoken--concerns, and his implicit assumptions. To do this fairly has meant that some of the less useful works are discussed more fully than the more valuable ones, so that a substantiated, if abbreviated, case could be made for criticisms rendered.

It will also be noted that in many cases major works in the field have been treated more briefly than minor papers. This has been done with the thought that it may not be worth the reader's time to search out the minor papers, but that a summary of their statements may be useful, while the major works should, and can more easily, be examined first hand. Several of the major works are also discussed in the body of the paper. The bare minimum of indispensable works on deterrence is probably these: Aron 1964, Brodie 1959, Kissinger 1960, and Wohlstetter 1958.

The practice of using the present tense in discussing the works in the bibliography has been used throughout. Thus, when a man is described as expressing certain views in a 1963 book with the words "The author states . . .," it should be understood that he may well have changed his views since then, or may indeed no longer be alive. Although this practice may cause some problems, it seemed to avoid more.

ACHESON, Dean

1958

Power and Diplomacy

Harvard University Press: Cambridge, Mass.

[A section headed "The Limitation of Massive Retaliation as a Deterrent" (pp. 46-53) attacks the Eisenhower-Dulles policy of using the strategic nuclear capability as a deterrent to all forms of aggression, worldwide. Acheson also urges civil defense as a support for deterrence.]

ALBERT, Bernard S.

1971

A Direction for Strategic Deterrence in the 1980's

General Electric: Philadelphia

Preliminary Draft, Not for Public Release

[Part of the search for less-than-spasm targeting that led to Schlesinger's selective nuclear targeting. Albert's approach is to identify specific Soviet sensitivities, select targets whose destruction would severely strike at these sensitivities, and aim weapons at these targets that can destroy them while doing minimum collateral damage. The sensitivities he identifies include ability to maintain central control, ability to conduct war, resources to sustain key elements of the population, and ability to defend against external threats, specifically threats from China. The capability for assured destruction would be maintained. A significant and useful paper, although the author's argument is not very clearly presented and the accompanying charts are somewhat confusing.]

1972

"Objective Deterrence": A White Paper on Expanded
"Realistic" Deterrence for the 1980's

General Electric: Philadelphia

Not for Public Release

[An extension of the author's 1970 paper, which is more complete and more useful.]

ARON, Raymond

1964

The Great Debate: Theories of Nuclear Strategy, trans.

Ernst Pawel

Doubleday: Garden City, N.Y.

[Chapters 1-3 provide what is probably the best summary and analysis of the development and character of strategic nuclear deterrence theory and its application to the defense of Western Europe.]

BEAUFRE, André

1966

Deterrence and Strategy, trans. R.H. Barry
Frederick A. Praeger: New York

[A lucid work that directly addresses the issue of the deterrence concept. Beaufre makes the following points: The capacity for riposte is the key to nuclear deterrence. The capability to reduce the riposte is the key to nuclear initiative. The first strike must be a counterforce strike. The second strike must be primarily countervalue. (If it should be executed it would attack what the other side values most; in order to deter it must turn those things--cities, factories, other valued resources--into hostages.)

Beaufre clearly feels nuclear deterrence serves a valuable purpose, beyond deterring strategic nuclear use. Presumably part of that purpose is the protection of Western Europe. He believes that the fear of a possible first strike is fundamental to deterrence, that the disappearance of that fear would be a great loss. For him, absolute nuclear stability is a danger; he sees the goal as overall stability through nuclear deterrence. He wants to prevent war, not just nuclear war. Because US strategy is basically defensive, he sees the necessity for offensive potential to keep the Soviet Union within limits. He sees a counterforce capability as necessary. (In this connection, the reader may note Colin Gray's New York Times letter [Gray 1977], stating that the United States would probably strike first in any nuclear exchange, making a limited strike in response to a Soviet attack on Western Europe.)]

BRODIE, Bernard

1946a

"War in the Atomic Age"

The Absolute Weapon, ed. Bernard Brodie, pp. 21-69
Harcourt Brace: New York

[The first sentences of this paper take the reader back to the period when many influential people were saying there must be world government and international peace or world destruction, and when it was also being said that the atomic bomb was the complete offensive weapon, and that since there was no defense against it, it made surprise attack irresistible. Brodie's was a voice of reason, asking if these things were really true, if they had to be true, and what could be done to change them. One does see certain inadequately examined assumptions, growing out of the historical circumstances of the time, notably the assumption that cities had to be the targets of atomic bombing.]

1946b

"Implications for Military Policy"

The Absolute Weapon, ed. Bernard Brodie, pp. 70-107
Harcourt Brace: New York

[In this article can be seen the beginnings of the deterrence concept: surprise attack will not work if carrying it out would mean that the attacker's own cities would also be destroyed; even evacuated they hold the physical plant on which the nation depends. He gives a Jacob Viner credit for first suggesting and elaborating this view. Brodie makes the point that the different thing about the atomic bomb is not the amount of destruction it can cause but the tremendous concentration of the violence within a short space of time. See the section of the current paper headed "Beginnings" for a fuller summary of Brodie's points.]

1959

Strategy in the Missile Age

Princeton University Press: Princeton, N.J.

[Chapter 8, "The Anatomy of Deterrence," (pp. 264-304), is the relevant portion. Brodie's approach to deterrence is that it grows out of the nature of nuclear weapons. Deterrence of general nuclear war, and limitation of lesser wars, spring from the idea that total nuclear war must be avoided at almost any cost, since there is a very good chance that it would destroy the only values for which it would be worth fighting. (p. 269) Brodie feels deterrence also fits the fact that the United States is a status quo nation with cultural taboos against hitting first. He says, however, that we need a first-strike capability to defend our allies and because there will be some provocations that call for it, short of direct attack on the United States; he acknowledges that such a capability will be hard to achieve. Brodie stresses invulnerability of the retaliatory force and credibility of the deterrent threat. He stresses the fact that strength cannot be judged by the weapons held before a strike, but only by those that can survive. He points out that an opponent could hit our retaliatory force and spare our cities, and that we must have a strategy to deal with this possibility. He stresses the bridge between deterrence and defense: "The strategy of deterrence ought always to envisage the possibility of deterrence failing." (p. 292) Brodie also sees value in stability, defined as a situation in which neither of the two opposing powers has the capability of destroying the retaliatory forces of the other. He sees this condition as preferable for the United States to a situation in which the Soviet force was vulnerable and ours invulnerable, because in such a case the Soviets would theoretically be tempted to fire a preventive or preemptive attack.]

- 1978 "The Development of Nuclear Strategy"
International Security, 2:65-83
 [Includes historical survey of deterrent thought since 1964 and analysis of requirements for deterrence. Brodie opposes "limited nuclear options" as he sees them. (He favors full incorporation of tactical nuclear weapons into US forces in Europe.) The paper includes a critique of Pipes's 1977 paper, with which Brodie disagrees. He also disagrees with the strategic assessment of the Committee on the Present Danger.]
- BRODY, Richard
 1960 "Deterrence Strategies: An Annotated Bibliography"
Journal of Conflict Resolution, 4:443-57
 [Excellent five-page introduction providing an analytic summary of the various approaches to deterrence. Excellent annotations for 38 works. Reading through this brief paper provides a quick and extremely useful overview of the deterrence thought of the 1950s.]
- BUNDY, McGeorge
 1978 "Maintaining Stable Deterrence"
International Security 3 (No. 3, winter 1978-79), 5-16.
 [Bundy says that deterrence has worked, and that what we need to meet the threat of the Soviet build-up is forces so adjusted and supplemented as to continue to provide credible deterrence. He cites and agrees with General Maxwell Taylor's statement that "whatever real military meaning there is in 'essential equivalence' is subsumed under the concept of 'credible and high-confidence deterrence'." He believes that for effective deterrence the strategic nuclear forces do not need to be larger than at present; that the strategic triad should be maintained; that our land-based missiles should be made invulnerable (and that there is ample time to do this safely); that there should be greatly increased emphasis on redundant and survivable command, control, communication, and intelligence; and that a launch-on-warning policy would be a serious mistake.]
- CARLIN, Robert J.
 1979 "Strategic Deterrence in the Age of Detente"
US Naval Institute Proceedings, September 1979
 [A provocative article presenting a point of view which has some elements in common with Kissinger's at Brussels (September 1979). Carlin suggests that we should reevaluate the concept of extending a nuclear umbrella over

Western Europe, and should communicate to our allies that avoiding a US-USSR war is our prime concern and that we will come to their aid only if it seems to be in our best interests. He opposes flexible response options because they make lower levels of US-USSR conflict possible and therefore, in his judgment, make strategic nuclear war more likely.]

CHURCHILL, Winston
1955 "Defense Through Deterrents"
Vital Speeches, 21:1091-94

[Significant as the first presentation of deterrence to the world at large, for Churchill's clear exposition of the basic concept, and as probably the first major statement on deterrence following the development of the hydrogen bomb. See the body of this paper for a discussion of Churchill's major points.]

COFFEY, Joseph I.
1963 "Human Factor in Deterrence"
unpublished, c. 1963
Bendix Corporation: Ann Arbor, Mich.

[This is a good early discussion of the nonrational aspects of decision making, as these are related to deterrence. Coffey points out the difference in values between opponents, the fallacy in deterrence's assumptions that avoidance of nuclear war overrides other values for the opponent as it does for us, differences in perceptions and judgments, the very large number of variables in any real-life decision-making process, difficulties in communicating intent, and cultural (in the broadest sense) differences that affect decision making.]

1971 Deterrence in the 1970's
University of Denver Monograph Series in World
Affairs, No. 3
University of Denver: Denver, Col.

[Coffey outlines the shift in the strategic balance in favor of the Soviet Union and asks what effect this will have on deterrence. Finding that the United States and the Soviet Union have the power to destroy each other and that nothing either can do will change that situation, he concludes that deterrence need not be seriously jeopardized by the strategic balance shift. He believes that it would be difficult for the Soviet Union to exploit superior strategic power for political purposes, that the mere prospect of a nuclear exchange "may well suffice to induce caution," and that it thus

may be unnecessary for the United States to maintain more powerful forces than the Soviet Union.]

COLLINS, John M.

1976

"'Counterforce' and 'Countervalue' Differentiated"
Congressional Record 122 (No. 75): E2734-2735,
May 20, 1976

[Collins's definition of counterforce includes all offensive (or retaliatory) strategies and weapons that could degrade an enemy's military capabilities. He thus includes weapons and strategies aimed at "soft" military targets as well as those aimed at missiles in, or out, of hardened silos. His list of targets, however, makes it clear that he is not speaking of troop concentrations and other targets related to conventional war, but only to enemy strategic capabilities, both offensive and defensive, and to the command, control, and communications centers that support them.

Collins lists four assumptions about counterforce capability and argues that none is unqualifiedly sound: (1) only those counterforce targets related to hard targets are dangerously destabilizing; (2) the terms counterforce and first strike are synonymous; (3) first strike capabilities are intensely provocative; (4) provocations inevitably encourage preventive or preemptive wars. The discussion is useful and the arguments against these assumptions generally convincing, except in the case of the last point. Although provocations may not lead to preventive or preemptive wars, it would appear that by definition they encourage them.]

1979

"Principles of Deterrence"
Air University Review, 31:17-25

[Collins suggests principles of deterrence comparable to the traditional principles of war (cf. Reed 1975). His are preparedness, nonprovocation, prudence, publicity, credibility, uncertainty, flexibility, paradox (sometimes it is necessary actually to fight a war in one place in order to preserve deterrence elsewhere), independence, and change. These seem to be a mixed collection of elements essential for deterrence (credibility, nonprovocation), guidelines for conduct of deterrent strategy (flexibility, prudence, preparedness), and a descriptive comment (paradox). The article is helpful in stimulating thought on deterrence, and the bibliographic footnotes are excellent. The author's idiosyncratic style, replete with epigrams and alliteration, is a serious distraction.]

CONGRESSIONAL RECORD

1977 "The Neutron Bomb Arms Control Impact Statement"
August 3, 1977, H8498-H8502

[This document includes both the arms control impact statement for the enhanced radiation warhead (ERW) and a Library of Congress Congressional Research Service evaluation of it. The LCR evaluation discusses matters near the heart of deterrence, nuclear threshold, strategic balance, military stability, and strategic equivalency. It asks, for example, what the relationship is between nuclear threshold and deterrence: does the ERW's presumed enhancement of deterrence depend on a lowering of the nuclear threshold?]

CONOVER, C. Johnson
1977 US Strategic Nuclear Weapons and Deterrence
Rand Corporation: Santa Monica, Calif.

[This is a summary of the literature on deterrence, 1972-1977, plus some observations by the author. Conover presents a huge array of views by more than 60 analysts, but the paper is difficult to follow because it lacks emphasis. The author does provide a useful section on uncertainty and stability, and raises worthy questions on the tradeoffs between these two factors. A firm LNO (limited nuclear options) advocate, he includes telling arguments against finite deterrence.]

DAVIS, Lynn Etheridge
1975/76 Limited Nuclear Options: Deterrence and the New American Doctrine
Adelphi Paper 121
International Institute for Strategic Studies: London

[This is a useful summary of LNO's. It has been criticized by Colin Gray (1979) for giving a misleading impression of Schlesinger's approach, as embodied in National Security Decision Memorandum 242, by overemphasizing LNO's.]

DE WEERD, Harvey A.; William Jones; and Ralph E. Strauch
1971 National Decision Systems and Limited Strategic Operations
RAND Report R-539-PR
RAND: Santa Monica, Calif.

[A discussion of the problems that may be expected in the decision-making process in executing a policy of limited strategic operations.]

- DORNAN, James E.
 1979 "US Strategic Concepts, SALT and the Soviet Threat:
 A Primer"
Comparative Strategy, 1:201-22
 [Excellent summary of US national attitudes on war,
 force, and deterrence. Provides good summary, with
 quotations, of "overkill" school of analysts.]
- ENTHOVEN, Alain C.
 1963 "American Deterrent Policy"
 Kissinger 1965:120-34
 [A reprint of a speech made in 1963, this is an argu-
 ment in support of the ongoing build-up of conventional
 forces as essential to the credibility of deterrence:
 "Threats to blow ourselves up along with the aggressor
 are not likely to be credible." (p. 126) Also contains
 a very clear, concise statement of the argument for the
 existence and significance of the nuclear threshold,
 and for respecting it. (pp. 123-124)]
- FAIN, Janice S.
 1975 "Ethics and Nuclear Warfare"
 Unpublished paper. Available from author, CACI,
 Arlington, Virginia.
 [Useful for its unusual perspective, that of a writer
 with a US defense community orientation dealing at a
 sophisticated level with issues of ethics as they re-
 late to nuclear deterrence policy. Includes good sum-
 mary of "just war" concepts and discussion of their
 application to nuclear deterrence. Discussions of
 various schools of thought on the ethical implications
 of nuclear war.]
- FREY, Frederick W.
 1979 "The Adequacy of Our Conceptual Tools for Dealing with
 a Proliferated World"
International Political Effects of the Spread of
 Nuclear Weapons, John Kerry King, ed., pp. 198-225
 Papers for a colloquium sponsored by the Central Intel-
 ligence Agency and Office of the Assistant Secretary
 of Defense for International Security Affairs
 GPO: Washington (Stock Number 041-015-00105-1)
 [A survey of current methodology for the study of inter-
 national affairs. Frey concludes that the conceptual
 apparatus is rich and often insightful, but uneven and
 undisciplined. He comments on what he terms the super-
 ficial psychologizing of some strategic analysts, es-
 pecially in expressing the concept of "rationality" in
 such phrases as "only a madman . . ." and "it would be
 suicidal to . . ."]

GAIL, Bridget (pseudonym)

1979 "NATO, Kissinger and the Future of Strategic Deterrence"
Armed Forces Journal International, November 1979,
pp. 58 ff.

[Forceful critique of Kissinger's September 1979 Brussels speech, with a discussion of extended deterrence for NATO and an analysis of the speech's implications for the alliance and the future of deterrence. Includes extensive passages from the speech and states that all quotations were checked against a tape of the remarks as actually delivered.]

GALLOIS, Pierre

1961 The Balance of Terror: Strategy for the Nuclear Age,
trans. Richard Howard
Houghton Mifflin: Boston, Mass.

[Gallois makes the case for a French deterrence force, or rather, for any small or medium power having a deterrence force. He suggests that the United States cannot be expected indefinitely to mean that it will really launch a nuclear attack in defense of its allies if, with ICBMs in the Soviet Union, to launch such an attack would bring about its own destruction. European powers must have their own deterrents. Although it may seem that a small country cannot deter the powerful Soviet Union with a few weapons, it can do enough damage to outweigh the relatively small gain to the Soviet Union from seizing it. Gallois deals with the question of the vital interest for which a democratic nation would launch a nuclear attack, with the question of public opinion, and with the problem of the gap between official policy and public support in a democracy. Gallois feels population centers must be the targets, certainly for small nations that must seek the capability to do as much damage as possible if they are to achieve deterrence.]

1979 "The Future of France's Force de Disuasion"
Strategic Review, 7:34 ff.

[This paper does not deal with the deterrence concept, except by implication. Gallois sees France's force de disuasion as of increased importance, now that the Soviet Union has accurate long-range nuclear weapons for use against Europe. He points out that weapons that are "theater" for the United States are strategic for France. He suggests that an attack on NATO would be nuclear from the beginning, given the accuracy and surprise capabilities of the new weapons.]

GEORGE, Alexander L., and Richard Smoke
1974 Deterrence in American Foreign Policy: Theory and Practice

Columbia University Press: New York

[In this major, thoroughly researched work, George and Smoke deal entirely with deterrence of crisis and limited-war situations (i.e., statecraft deterrence and marginally extended deterrence), which they acknowledge to be quite different from strategic deterrence. The book is based on 11 historical cases, 1948-1962, all of which are judged to represent failures of deterrence. The authors conclude that deterrence has been depended upon too heavily in US foreign policy, and they urge a policy of influence in which deterrence (threat) plays a lesser role. In addition to extensive unannotated chapter-by-chapter bibliographies, there is valuable annotated bibliography embedded in the footnotes. The pre-nuclear historical section is well done, the authors seeking episodes and efforts that are truly comparable to nuclear-age deterrence. This is one of the few works on deterrence that includes an informed discussion of the theory of games, apparently the only one critical of deterrence that does so.]

GOURE, Leon
1979 "The Civil Defense Factor in the Strategic Balance"
National Defense, September-October 1979, pp. 45 ff.,
reprinted in US Air Force, Current News, Main Edition, Part 2, October 22, 1979, pp. 9-F, 10-F.

[Concise but substantive description of Soviet civil defense program and analysis of its place in Soviet war-waging capability and overall military strategy. Convincingly argues the credibility of US deterrence is undercut seriously by Soviet civil defense.]

GRAY, Colin S.
1971 "What RAND Has Wrought"
Foreign Policy, No. 4, fall 1971, pp. 111-129

[Gray criticizes civilian strategic thinking of the mid-1950's to mid-1960's for (1) being dominated by an "economic conflict" model; (2) being too optimistic about transferring theory to policy; and (3) having been stagnant since the middle 1960's because many of the leading thinkers went into government in the early 1960's. His argument appears open to criticism on the grounds that "economic conflict" is a misleading way to describe the theory of games, and that if (1) and (2) are true, it seems surprising that (3) is given as a criticism. The article provides a very useful

historical survey of deterrence theory. Gray urges renewed attention to the "prenuclear classics of strategic thought," a revival that appears to be taking place with the recent interest in Clausewitz.]

1977

"Defense: What the MX is all About"

New York Times, October 19, 1977, Letter to the Editor

[In defending the MX, Gray gives as his first point "to maintain or restore deterrence." He suggests that the United States is "almost certain to be the first superpower to need to launch strategic nuclear weapons (particularly, if not exclusively, in response to some galloping disaster in Europe)," and that it will want to launch a 'very limited' first strike." (Italics in original.)]

1979

"Nuclear Strategy: The Case for a Theory of Victory"

International Security, 4:54-87

[An extremely useful article with rich bibliographic footnotes. Gray's basic point is that the United States now has no strategic doctrine and no agreed-on strategic force posture. He urges adopting a theory of victory, i.e., goals that would constitute victory for the United States if it should be forced to fight a war, and constructing a strategy designed to achieve such a victory. He points out that the overwhelming emphasis on deterrence has led to a lack of seriousness about the conduct of war, which in turn has weakened deterrence. Gray's strategic force posture would include targeting the Soviet regime's political control, including its military strength. (His views on targeting are similar to those of Albert 1971.) The paper includes a clear summary of the two current (late 1979) schools of thought on nuclear deterrence: (1) the inheritors of MAD, who favor deterrence through the capability of inflicting punishment and who see security as based on the logic of technology--if both sides have invulnerable effective retaliatory forces, no one can win, no one can attack; and (2) those who favor deterrence through the "expectation of a militarily effective prosecution of war," because the Soviet Union is rejecting MAD and the technological basis for MAD is being eroded (the US retaliatory force is becoming vulnerable). Gray says the latter group is "edging toward" the idea that the utility of nuclear weapons in nonuse may actually be wrong, may have had a bad effect on Western security.]

GUSTAVSON, Marvin R.

1979

"A Dynamic View of Deterrence"

Comparative Strategy, 1:169-82

Reprinted from US Air Force, Current News, Special Edition, August 2, 1979

[Gustavson urges that more attention be given to a dynamic, constantly changing configuration of weapons and forces for deterrence. A key element of the deterrence thus achieved would be the time required by an adversary to reconsider and reconfigure his forces in the light of a new and qualitatively different deployment by the United States. Gustavson also stresses the deterrent value of uncertainty, another result of dynamic deterrence. He believes that, using this approach, deterrence could be greatly enhanced by relatively small quantitative changes. As examples of the effectiveness of innovation, he cites the value of a primitive radar capability to the British in the Battle of Britain (not as a deterrent in this case, but operationally); the problems created for the Soviets by the introduction of the first Polaris submarines (considerably greater problems than doubling the number of boats would pose later); and the impact on US planning of the first evidence of Soviet antisatellite interceptor capability. He stresses the greater value of qualitative superiority in contrast to numbers alone in public and leadership perception of the balance of forces. Gustavson does not favor quality and innovation alone, stressing that long-term strength is essential when the adversary has adapted to an innovation. He does feel, however, that it is unlikely that there can be a permanent, static mutual deterrence that can be established and then left alone.]

HAMMERMAN, Gay M.

1965

"Summary of US Deterrent Strategy Theory"

Military, Political, and Psychological Implications of Massive Population Casualties in History, September 1965, Vol. 4

HERO Report for Combat Developments Command, Headquarters, US Army

[A concise statement of deterrence theory.]

1966

"Attitudes on War and Weapons"

National Strategic Concepts and the Changing Nature of Modern War, 2:113-31

HERO Report prepared for the US Air Force Office of Scientific Research

HERO: Washington, D.C.

[Concise discussion of the nature of public opinion on arms and strategy matters.]

HOAG, Malcolm W.

1961 "On Stability in Deterrent Races"
World Politics 13:505-27

[A valuable, relatively early theoretical work that distinguishes between deterrence, defense, and victory, and contrasts the kind of arms each might be expected to require.]

HOEBER, Amoretta M., and Francis P. Hoerber

1975 "The Case Against the Case Against Counterforce"
Strategic Review, Vol. 3, No. 4 (fall 1975)
Reprinted in Congressional Record, 122 (No. 94):
E3446-3447

[Provides counterarguments to many of the points made in Sherman 1975. The Hoeberts reject the assumption that greater accuracy is inevitably provocative, asserting that the United States will have no incentive to attack Soviet silos with a first strike, no matter how accurate its missiles, because of the great advantage the Soviet Union has in numbers and throw weights of missiles.

The Hoeberts would define counterforce to refer to all military targets, including supply depots and concentrations of reserve forces.

HOEBER, Francis P.

1978 "How Little is Enough?"
International Security, 3:53-73

[Hoerber favors a counterforce strategy, opposes finite deterrence, especially the kind of minimum deterrence that had recently been suggested by President Carter (as few as 200-250 strategic nuclear missiles). He argues that lowering missiles below a certain level would be destabilizing, dangerous to US security, threatening to alliance cohesion, conducive to conventional war, and lead to excessively high expenditures for conventional weapons buildup.]

HOFFMAN, Stanley

1979 "New Variations on Old Themes"
International Security, 4:88-107

[Very useful summary of the continuing problems inherent in the NATO alliance, with full attention to problems of deterrence.]

HOHENEMSER, Kurt

1974 "Declining Deterrence"
Environment, November 1974, Reprinted in US Air Force,
Current News, December 1, 1974, pp. 5-F-8-F

[Writing from an arms-control point of view, the author suggests that as weapons systems (ICBMs, SLBMs) become vulnerable to counterforce weapons they be phased out, leaving only a minimum invulnerable force as deterrent. He suggests that if the United States acquires a counterforce capability to match the USSR, it does not have an invulnerable deterrent, but rather a tempting target. He suggests that to acquire a counterforce capability

would be to start an arms race in vulnerable weapons and thus be dangerous. The argument is open to attack for (1) not indicating how the United States is to see that the weapons its missiles are becoming vulnerable to are phased out; (2) not indicating how the danger of having no more, or fewer, missiles than future newly nuclear powers would be met; (3) grouping mobility along with accuracy and throw weight as characteristics that do not make ICBM forces less vulnerable, whereas mobility does in fact contribute greatly to invulnerability; (4) suggesting that counterforce-capable weapons are more vulnerable than countervalue weapons, which seems logically insupportable; he may mean that they are more provocative, since there is a great advantage to the attacker in striking first if he can disarm his adversary. The article includes an excellent definition and explanation of throw weight.]

HOWARD, Michael

1979

"The Forgotten Dimensions of Strategy"
Foreign Affairs, 57:975-86

[Howard sees strategy as having four dimensions: operational, social (both pointed out by Clausewitz), logistical, and technological. He points out the weakness of current Western deterrent strategy in the operational (conduct of war) and social dimensions. He believes it is unclear that the West has the will to conduct operational defense, or initiate nuclear war, or protect its people. He sees Soviet efforts to attain the capability to fight a nuclear war and to protect leaders and key elements of the population as not necessarily indicating aggressive intentions but as simple common-sense measures which the West should emulate. Not to do this is to weaken deterrence seriously.]

HUGHES, G. Philip

1978

"Cutting the Gordian Knot: Theater-Nuclear Force for Deterrence in Europe"
Orbis, 22:309-22

[Hughes lays bare a central dilemma with regard to the defense of Europe. As matters stand, NATO must deter a Soviet nuclear attack while simultaneously using tactical nuclear weapons itself to bolster its deficient conventional forces. He asks, if NATO's tactical nuclear weapons really deter Soviet use of nuclear weapons, do not Soviet tactical nuclear weapons deter NATO use of such weapons to bolster conventional forces? Hughes believes that both NATO missions cannot be accomplished; one must be given priority. Since deterring a Soviet nuclear attack is of paramount importance, the imbalance in conventional forces must be rectified by upgrading NATO's conventional capability. He also

believes theater nuclear forces must be upgraded if they are to be an effective deterrent, and he makes some specific suggestions. This is a provocative and very lucid article.]

IKLÉ, Fred Charles

1973 "Can Nuclear Deterrence Last Out the Century?"
Foreign Affairs, 51:267-85

[A significant article, this is probably the best expression of the rejection of MAD and the advocacy of selective and flexible targeting that were emerging in the early 1970's. Iklé suggests various historical reasons for the views, accepted in the late 1960's, that nuclear forces should be designed almost exclusively for retaliation, that retaliation must be one massive, swift strike, and that it must kill a sizeable and specified proportion of the Soviet population, with the Soviets having the same ability to kill a sizeable portion of the US population. He points out logical inconsistencies in the approach, and the great difficulty in defending its morality. He urges abandoning the idea that threatening the mass killing of people is necessary; targeting military, industrial, and transportation assets; and abandoning the idea of an instant launching of most of the retaliatory force in favor of highly invulnerable forces available for much later launching.]

1980 "NATO's 'First Nuclear Use': A Deepening Trap?"
Strategic Review, 8:18-23

[Urges deterrence for Europe through development of second-strike theater nuclear capability, able to respond to any level of Soviet attack, with ability to destroy military targets in the Soviet Union. Also urges making more use of deterrent effect of upgraded conventional forces. Makes strong case that the threat of "first use," meaning the threat to introduce nuclear arms into a conventional battle, is now outmoded, no longer fits the strategic balance in Europe. Makes other good points, including suggestion that the United States needed strategic superiority to compensate for lack of martial discipline and singlemindedness. (p. 21)]

INSTITUTE FOR DEFENSE ANALYSES

1960 "Lexicon of Terms Relevant to National Security Studies on Arms and Arms Control," and "Appendix to the Lexicon of Terms" (appendix by James E. King, Jr.)
IDA:SS(P)-1, Annex 1
Prepared for Seminar on Deterrence and Arms Control, Washington, D.C., July 25-27, 1960, sponsored by Institute for Defense Analyses
Institute for Defense Analyses: Washington, D.C.
[Useful definitions. Those in the appendix are especially thoughtfully prepared. Many of them are little essays on the concepts defined. The lexicon has the additional historical value of pinning down how these terms, including, for example, counterforce and deterrence, were used in the literature and regarded by an informed analyst in 1960.]

KAHAN, Jerome

1975 Security in the Nuclear Age: Developing US Strategic Arms Policy
Brookings Institution: Washington

[Probably the most comprehensive presentation of deterrence and related strategic matters since Kissinger 1960. The focus is on "stable deterrence." See also entry for Speed 1979.]

KAHN, Herman

1960 The Nature and Feasibility of War and Deterrence
RAND Corporation: Santa Monica, Calif.
Revised and enlarged version of article in Stanford Research Institute Journal, 4th quarter, 1959

[Much of Kahn's analysis seems written for 1980 as well as 1960: mutual-homicide balance of terror is a shaky thing. For it to work, both sides, not just the West, have to accept it completely, and the Soviets apparently do not accept it. "Even if we have acquired the highest-quality Type 1 Deterrence [strategic nuclear deterrence] capability, we must still be able to fight and survive wars." (p. 40) To get into the position in which we would be unwilling to start a war under any circumstances "would be equivalent to disowning our alliance obligations by signing a non-aggression treaty with the Soviets--a non-aggression treaty with almost 200 million American hostages to guarantee performance." (p. 40) This paper includes a clear presentation of Kahn's classification of deterrence into three types, which is referred to in the body of the present paper. Much of this paper, including the Type 1, 2, and 3 deterrence classification, was incorporated into Kahn 1961.]

1961 On Thermonuclear War
Princeton University Press: Princeton, N.J.

[In portion dealing with deterrence, Kahn here includes a critique of minimum and finite deterrence. His classification of deterrence into Types 1, 2, and 3, depending on what it deters, is also included in this book.]

1965

On Escalation: Metaphors and Scenarios
Frederick A. Praeger: New York

[This book deals only indirectly with deterrence, but the appendix, "Relevant Concepts and Language for the Discussion of Escalation," includes very useful discussion of deterrence terminology. In analyzing deterrence by effectiveness on a six-point scale from minimum to "stark" (virtually absolute), Kahn interestingly uses number of population casualties as the measure of extent of deterrence.]

KAUFMANN, William W.

1956

"The Requirements of Deterrence"
Military Policy and National Security, ed. William E. Kaufmann
Princeton University Press: Princeton, N.J.

[An important early essay. Kaufmann is responding to the massive retaliation policy announced two years earlier. He attacks that approach for making a threat that is not credible, stresses that credibility is essential to deterrence, and sees it as made up of credibility of intentions, credibility of capability, and credibility of cost (i.e., credibility that the aggressor's gain will not be worth the cost). He suggests that credibility of intentions is based in part on US and allied public opinion, and he stresses this point --Howard's (1979) "societal dimension." "There must be genuine evidence of popular support" for the announced intentions of government leaders in a democracy, or deterrence is not credible. (p. 20)

Kaufmann's definition of deterrence: "Essentially, deterrence means preventing certain types of contingencies from arising." (p. 17) He includes in deterrence rewards given as well as punishments threatened. (p. 31) The deterrence concept, as he treats it, lacks connotations of terror, and could be equated with dissuasion. He implies that deterrence is achieving security without resorting to violence. (p. 12)]

KISSINGER, Henry A.

1960

The Necessity for Choice
Harper & Row: New York

[This landmark book is discussed at some length in the section of the present paper headed "The Growth of Theory."]

1965

Problems of National Strategy (ed.)
Frederick A. Praeger: New York

[A valuable collection of readings representing a variety of points of view. Kissinger's brief introduction

to Part I, on strategic doctrine (pp. 9-16), is a useful interpretative summary of the history of US doctrine, 1945-1965. For especially relevant individual papers included in the book, see entries in this bibliography for Enthoven, Szilard, Waskow, and Wohlstetter.]

LAMBETH, Benjamin S.

1975

Selective Nuclear Operations and Soviet Strategy

RAND Paper Series, RAND Corporation: Santa Monica, Calif.

[This paper, by an analyst influential in the movement for selective nuclear operations, examines Soviet attitudes and strategy that might limit US efforts to use selective targeting. Lambeth states that before 1967 the Soviets rejected any target restraint, saying that any nuclear war would inevitably be an all-out war. However, he suggests that this may have been because the Soviets' nuclear force was then relatively small and lacked survivability, leading them to believe that they could win a war only if they struck first with all their forces. "Selective targeting" to the Soviets simply meant establishing targeting priorities that would cause as much destruction as possible. By 1967 the Soviet strategic forces had become sophisticated enough to accommodate a more flexible policy, and Lambeth states that by 1975 the Soviets were at least admitting the possibility of thresholds between theater and intercontinental war, and between nuclear and conventional war within a theater.]

LATTER, A.L.; E.A. Martinelli; and W.B. Wright

1970

A New Strategic Deterrent Policy (U). Secret.

RAND Report RM-6321-PR

Rand Corporation: Santa Monica, Calif.

[This paper is part of the search for new ideas on deterrence policy of the period c. 1970, in response to the great recent Soviet buildup and the requests of the new administration. The authors are dealing with deterrence of a massive surprise attack; they assume explicitly that, if such an attack can be deterred, other attacks can also be deterred. They suggest that assured destruction of 20-25% of the Soviet population and 50% of Soviet industrial capacity might not be a threat sufficient to deter Soviet attack, since Soviet leaders might feel that winning a war (in their terms) and ruling the world were gains sufficient to compensate for this loss. The Soviets might feel they could accomplish this by massive attacks on US forces and population centers, plus a few Western European cities, while keeping additional strategic forces in reserve.

In seeking ways to deter this possible threat, the authors consider and reject any attempt to increase Soviet casualties as too costly in view of diminishing returns. They suggest (1) retaining a reserve with long survivability--deeply buried and at sea on Poseidons; (2) retaining a survivable force dedicated to the defense of Europe; and (3) keeping the assured destruction policy and capability.]

LEE, William T.

1978

Summary of Soviet Concept of Deterrence and Force Development

Unpublished revised draft

Files of Defense Nuclear Agency

[Good, concise summary of Soviet view of deterrence and balance (correlation of forces), and of Soviet procurement and deployment policy. Lee says Soviet literature presents a "one-dimensional view of deterrence: the USSR and its allies must deter the US/NATO coalition from a nuclear attack. Hence any change in the general and military balance of forces in favor of the USSR/PACT strengthens deterrence while any change in favor of US/NATO increases the risk of war." (p. 1) He states that the Soviets regard nuclear war as too destructive and risky to be initiated, but that they intend to be ready to fight and win a war, if deterrence fails. (p. 2)]

LEVINE, Robert A.

1963

The Arms Debate

Harvard University Press: Cambridge, Mass.

[An extremely useful book 15 years after its publication, despite the fact that it deals with specific writers and issues of the early 1960's. Levine groups writers on defense matters in a horseshoe-shaped array, from antiwar systemist to anti-Communist systemist. The two kinds of systemists are close to each other in their absolutism, although diametrically opposed in what they feel is most important in defense policy. Between them are ranged the antiwar marginalists, the middle marginalists, and the anti-Communist marginalists, who have in common the fact that their recommendations tend to be based on compromise, gradualism, and recognition of the values of several different courses of action. This taxonomy provides a valuable tool for anyone investigating the literature of deterrence, helping to reveal the unspoken assumptions and personal, nonexplicit agendas that color ostensibly objective analysis. Levine's own analysis is as clear, logical, and objective as any could be. (He identifies himself as a middle marginalist, somewhat toward the antiwar marginalist side of the category.)]

LOWE, George E.

1964

The Age of Deterrence

Little, Brown: Boston, Toronto

[A history of deterrence theory from 1952 to 1963. Lowe divides theorists and policymakers into two groups, which he calls Utopians and Traditionalists. These categories are not defined precisely, and the taxonomy appears too gross to be very useful: For example, the Traditionalist category includes such widely diverse thinkers as Dean Acheson, Paul Nitze, J. Robert Oppenheimer, Robert E. Osgood, and Raymond Aron. In general, Utopians view nuclear weapons as simply weapons, to be used like any others; place great faith in technology and constantly seek a technological breakthrough that will solve US military problems; and are supported by Air Force general officers. Army and Navy officers, on the other hand, tend to be Traditionalists, favoring diplomatic pressure and conventional forces to solve US defense problems. (The book's stress on service rivalries and their very high correlation with policy issues reflects the period when it was written.) Lowe sees finite deterrence as the only real deterrence, and strongly criticizes counterforce strategies as war-winning strategies that imply a preemptive first strike and stimulate arms racing. (pp. 242-50) The book does make a number of sound and provocative points and is especially useful for its relatively detailed account of policy changes and its many quotations from speeches, press conferences, and interviews.]

MccGWIRE, Michael

1979

"Naval Power and Soviet Global Strategy"

International Security, spring 1979, pp. 134 ff. Reprinted in US Air Force, Current News, Special Edition, no. 453, August 15, 1979

[Includes brief, very useful discussion of Soviet view of deterrence (pp. 4-5 of reprint), and provocative, closely reasoned analysis of genesis of contemporary Soviet military doctrine, which MccGwire sees as a response to the 1961 nuclear initiatives of the Kennedy administration (sharp increase in Polaris and ICBM production) and the early "crusading rhetoric" of that administration (pp. 7-9 of reprint).]

METCALF, A.G.B.

1978

"The JCS Reports"

Strategic Review, Vol. 6, No. 1, winter 1978, editorial
Reprinted in Current News, Weekend Edition, March 19,
1978

[An attack on deterrence, with deterrence understood as reliance on capability for assured destruction, in contrast to acquisition of forces and weapons, plus training and contingency plans, for fighting a war.]

MORGAN, Patrick M.

1977

Deterrence: A Conceptual Analysis

Vol. 40, Sage Library of Social Research
Sage Publication: Beverly Hills, Calif.

[The author, who has also written on "participatory democracy" and the "military-industrial complex," appears to be using the concept of deterrence, which he sharply criticizes, to attack the US defense establishment and the very existence of military power. His analysis of the deterrence concept is weak and inconsistent. For example, he gives illustrative examples that are not deterrence in the usual sense but rather the conditioning of behavior by means of punishment. (p. 17) Morgan favors working toward "dismantling a good part of nations' deterrence machinery while stressing other kinds of international relationships." (pp. 214-15; emphasis added) He does not suggest how we are to dismantle the deterrence machinery of any nations but our own.]

MORGENTHAU, Hans J.

1979

"The Mutual Ability of Utter Destruction"

Baltimore Sun, August 9, 1979, p. 17

[Morgenthau appears to take an anti-"overkill" position, although he does not use the term. He holds that with nuclear arms, unlike the case with conventional arms, more weapons do not mean more strength. He suggests that it does not matter if the Soviet Union has more weapons and more accurate weapons, so long as we have enough to "destroy" them.]

NAROLL, Raoul; Vern L. Bullough; and Frada Naroll

1974

Military Deterrence in History: A Pilot Cross-Historical Survey

State University of New York Press: Albany, N.Y.

[The authors are cultural anthropologists primarily interested in adapting the anthropological technique of the cross-cultural survey to historical studies. On the basis of their 20 randomly selected decades taken from a long span of human history, they find no statistical correlation between deterrence as they understand it--i.e., large and highly regarded armaments held by a

powerful country in a defensive stance--and peace. This ambitious work is seriously damaged by the authors' failure to explore and define the concept of deterrence with any care at the outset. They do not cite the standard works by Brodie, Kissinger, Kahn, Wohlstetter, and others that deal with the deterrence concept in the real contemporary world. The works cited are in general abstract and theoretical, or minor and irrelevant. Also, since most of the bibliography cited is from the 1950's (a single minor 1962 work is the latest), the bulk of the literature on the subject has been missed. The study itself is open to many criticisms, including these: The states chosen for examination were selected because they were "most conspicuously involved in conflicts with other states" (pp. 330-31), so it is not surprising that the authors found that war was not prevented. Traits, such as quality of military forces, were all coded either present, absent, or no data, whereas in reality these characteristics have to be seen and coded on a continuum. The authors make few claims for the significance of their findings on deterrence (p. 359), and in this they are wise.]

NITZE, Paul H.

1976

"Deterring Our Deterrent"

Foreign Policy, No. 25 (winter 1976-77), pp. 195-210

[Nitze discusses various ways of assessing the relative strategic nuclear capabilities of the United States and USSR, and states that the best way is to compare what forces would remain after an exchange in which the USSR attacked the United States and the United States retaliated by reducing Soviet reserve forces to the greatest useful extent. He says that by this, as well as by other, simpler measures, the USSR is steadily gaining an advantage over the United States. Having reached the conclusion that the Soviets are acquiring the capability to fight a nuclear war, Nitze makes a strong case for speedily and greatly increasing the US survivable counterforce capability.]

1979

"Preserving the ICBM Leg of the Triad"

National Defense, July/August 1979, p. 30

[Nitze offers a strong argument for mobile ICBM's (MVPS). In a virtual paraphrase of Wohlstetter 1959, he stresses the necessity of survivability and lists its requirements: "Surviving forces must be appropriate for their mission, responsive to command and control, able to penetrate defenses. . . , and capable of destroying targets that must be eliminated."]

ORBIS
1974

"Focus on Military Balance, US Strategic Forces, and
the New Targeting Doctrine"
Orbis, 18:655-769

[An issue focused on this topic, with eight articles
treating various aspects. Excellent source for deter-
rence theory of the early 1970's. The paper by William
R. Van Cleave and Roger W. Barnett on "Strategic Adap-
tability" is especially useful.]

PIPES, Richard E.
1977

"Why the Soviet Union Thinks It Could Fight and Win a
Nuclear War"
Commentary, 64:21-34

[Important article that introduced to a wider informed
audience, outside the defense community, the evidence
that the Soviet Union has a policy of achieving the
capability of fighting nuclear war, has a strategy for
such a war, and has increasing capabilities for it.]

POIRIER, Lucien
1972

"Deterrence and the Medium-Sized Powers"
Military Review, November 1972, pp. 22-34

[Lucid, provocative exposition of the French view, with
useful comments on deterrence in general.]

QUESTER, George H.
1966

Deterrence Before Hiroshima: The Airpower Background of
Modern Strategy
John Wiley and Sons: New York

[Inevitably more useful from its inception than Naroll
et al. 1974, also a treatment of prenuclear deterrence,
because it takes a clinical approach (studying one
relevant case in depth) rather than a statistical
approach, and the former is much better suited to the
subject. Quester takes the case of aerial bombard-
ment, regarded by interwar governments as having the
destructiveness that nuclear weapons have provided in
reality. He analyzes the "bomber threat," 1899-1945,
and discovers factors applicable to understanding
nuclear deterrence. The book's conclusions are rather
vague.]

1978

"Can Europe Really be Defended?"
Encounter, 51:6-19

[Thorough, well-argued paper on advantages of precision guided missiles and urbanization of the North German Plain for the defense of NATO. Very little that is relevant for the concept of deterrence, but does touch upon the relationship of defense and deterrence: "Is it 'deterrence' when wars are avoided simply because the attacker would lose many more troops and vehicles than the defender? Whatever it is, 'deterrence' or just 'defence,' it tends to produce peace, which is what we want."]

REED, Robert H.

1975

"On Deterrence: A Broadened Perspective"

Air University Review, May/June 1975

Reprinted in US Air Force, Current News, Special Edition, May 29, 1975, pp. 1-10

[In context of Soviet-US "essential equivalence," author essays formulating principles of deterrence comparable to the traditional principles of war. His principles are credibility of means, credibility of will, clarity of intent, controlability, flexibility, negotiation, unity of effort, economy of effort, and interdependency. This seems to be a mixed group, including some principles, notably the first two, that are absolutely essential to achieving deterrence, and other, like negotiation and economy of effort that are, rather, only very helpful in successfully conducting a policy of deterrence. Interdependency (of allies) would seem to be a factor that should be recognized, but not placed in the same category as credibility. It is hard to justify the absence of survivability of the retaliatory force, surely an essential principle of deterrence in the nuclear age.]

ROWEN, Henry S.; and A.M. Hoeber

1974

Strategic Forces and Changing World Political Trends (U).
Confidential.

General Research Corporation Report, DRC 74-31025, July 1974
Prepared for Defense Advanced Research Projects Agency;
supervised by Defense Nuclear Agency

[Stresses importance of "dual criterion" in targeting--considering both expected damage to intended targets and expected damage to nontargets, i.e., people and facilities the United States might wish to preserve. Includes analysis of various target arrays according to the dual criterion, taking into account the accuracy of the newer weapons. Among the conclusions: there is a need to rethink the assumption that any attack on targets in the Soviet Union implies general nuclear war or even nuclear war; the formerly sharp distinction between theater and strategic forces is now less clear; attacks on economic targets are increasingly feasible, and it is increasingly feasible to distinguish between attacks on civilian populations and attacks on war-supporting industry. Good background for forming judgments on deterrence theory in the 1970's and 1980's.]

SHELLING, Thomas C.

1960

The Strategy of Conflict

Oxford University Press: New York

[Chapters 1 and 2 are a clear explication of the theory of games as it applies to international conflict. Schelling makes it clear that the assumption of "rational behavior" in the theory is one made for analytical purposes, because it provides a tool for analyzing conflict, not because anyone believes that people or nations necessarily behave that way. It can produce results, but they have to be looked at in the light of reality, not accepted blindly. Assuming rationality and then proceeding to certain decisions does not mean saying that "only a madman" or "no rational person" could do otherwise. But when Schelling writes about what "we have learned" and "we have recognized" in the 12 years since deterrence became announced policy, 12 years in which the theory had been refined and improved, he lists some things that were learned only through the logical extension of the theory, not through real-world events, notably, "We have learned that the threat of massive destruction may deter an enemy only if there is a corresponding implicit promise of nondestruction in the event he complies, so that we must consider whether too great a capacity to strike him by surprise may induce him to strike first to avoid being disarmed by a first strike from us." (pp. 6-7)]

1966

Arms and Influence

Yale University Press: New Haven, Conn.

[Treats certain refinements of the deterrence concept: the matter of communicating commitment (that the stake is really so high for the deterrer that he would use force to fend off losing it); the matter of thresholds, including the nuclear threshold; the whole matter of using force indirectly, as a threat, rather than directly, as force. Lucid, well-presented arguments; terse, but with an ample number of examples to make the points clear.]

SCHLESINGER, James R.

1968

Rationale for NU-OPTS (U). Confidential.

RAND Corporation Report R-1608-PR

Prepared for US Air Force Project RAND, December 1968;

Reissued September 1974

[The author's summary describes the report as "a preliminary exploration of the strategic and political rationale for sub-SIOP options." Begins with the problem of the Soviet Union having acquired a secure second strike force, so that a US first strike is no longer a feasible option, and the implications of this situation for US obligations to allies: if Europe is attacked, we must "do something," and yet "the inherited belief that we should implement the SIOP is not very attractive." (pp. 2-3) Schlesinger stresses the need for

"exploitable asymmetry below the level of all-out spasm war" (i.e., a US advantage in force strength or invulnerability), if sub-SIOP operations are to be effective. Otherwise, our ability to fulfill our commitments to NATO will rest on "a war of nerves."]

SCHWARTZ, Urs

1966

American Strategy: A New Perspective

Doubleday & Co., Inc.: Garden City, N.Y.

[Good general introduction to US deterrent strategy and other strategic concepts. The Swiss author achieves some objectivity and balance from his European perspective. Includes useful summaries of the contributions of Kaufmann, Kissinger, Brodie, Levine, and others.]

SCOVILLE, Herbert, and Robert Osborn

1970

Missile Madness

Houghton Mifflin: Boston, Mass.

[This is a primer on strategic weapons, deterrence, and arms control, from a moderate arms control point of view (antiwar marginalist, in Levine's taxonomy). The format and cartoon-type illustrations make this book look frivolous, but it is serious and solid enough to be a journal article.]

SEYBOLD, Calvin C. (Maj., USAR)

1979

"Mutual Destruction: A Deterrent to Nuclear War?"

Military Review, September 1979, pp. 22 ff.

Reprinted in US Air Force Review, Current News, Main Edition, Part II, September 20, 1979

[The author's thesis is that Western, and specifically US, economic strength, rather than the threat of assured destruction, has deterred the Soviet Union from initiating war. His argument is constructed in rigid syllogism style, using statements selected from a relatively small number of sources. The paper is of interest not only for its thesis but as an example of a number of recent papers flatly declaring the bankruptcy of mutual assured destruction as a strategy.]

SHERMAN, George

1974

"A New Nuclear Scripture"

Washington Star-News, April 15, 1974

[Concise, clearly presented historical background for and exposition of the "Schlesinger doctrine," NSDM 242, and changes at that time in targeting doctrine and research on new weapons systems. Recommended by Lambeth (1974) as an especially good presentation of this material.]

SHERMAN, Robert

1975

"The Case Against Counterforce"

Strategic Review, Vol. 3, No. 2 (spring 1975)

Reprinted in Congressional Record, June 2, 1976, pp.

E3063-3066

[This article does not present a simplistic finite deterrence position, but rather makes a closely argued, sophisticated case against counterforce strategies and capabilities, using considerable specific data. However, much of the data on Soviet capabilities is now outdated, and current, greatly increased Soviet capabilities weaken the argument.]

SNOW, Donald M.

1979

"Current Nuclear Deterrence Thinking: An Overview and Review"

International Studies Quarterly, 23:445-86

[A survey of recent discussion of deterrence strategy and of force structuring for deterrence. Includes a critique of MAD, an account of the Soviet military buildup, and a discussion of the adequacy of US strategic forces and strategy. The author concludes that MAD is basically sound, and that limited nuclear options may be dangerously destabilizing.]

SNYDER, Glenn H.

1961

Deterrence and Defense: Toward a Theory of National Security

Princeton University Press: Princeton, N.J.

[Snyder begins by distinguishing between deterrence and defense: deterrence means discouraging the enemy from taking action; defense means reducing our costs and risks if deterrence fails. Deterrence, he says, does not vary directly with capacity to fight wars; certain forces could deter well but not defend well, while others might be good at limiting damage and denying territory (defense) but not very good at deterring. We have to measure our forces on both the deterrence and the defense yardsticks and gauge their aggregate worth, so that we can make intelligent choices about new systems. He concludes that an optimum mix of deterrence and defense is needed. Snyder's analysis becomes very complicated and academic at times. He does not bridge the gap between deterrence and defense in the sense of showing ways in which the capability to defend could support deterrence. His suggestions for estimating aggregate worth on the two yardsticks sound as though they could lead to the worst kind of cost/effectiveness analysis, in which weapons systems that are very good for a single task are rejected in favor of those that are not very good for any of several tasks.]

SNYDER, Jack L.

1977 "The Soviet Strategic Culture: Implications for Limited Nuclear Operations"

Project AIR FORCE Report (RAND)

RAND Corporation: Santa Monica, Calif.

[A very useful exploration of Soviet attitudes and the reasons for them, centering on a Soviet "strategic culture" formed by historical, geopolitical, and psychological factors. In the Soviet view, Snyder says, deterrence is based on the ability to defeat the enemy and therefore to discourage his attack. He suggests that the question to ask is not "Will the Soviets use flexible options?" but rather "Are the Soviets mentally prepared to think about flexible options?"

SPEED, Roger D.

1979 Strategic Deterrence in the 1980s

Hoover Institution Press: Stanford, California

[A concise, lucid, balanced treatment of deterrence. Includes a very useful overview of deterrence history and theory. Comparable to Kahan 1975 in breadth and clarity, but more nearly up-to-date and giving more attention to counterforce options and the importance of survivability.]

STEINBRUNER, John

1976 "Beyond Rational Deterrence: The Struggle for New Conceptions"

World Politics, Vol. 28, No. 2, January 1976

Reprinted in US Air Force, Current News, March 4, 1976, No. 84

[Steinbruner criticizes the "rational" (basically, theory of games) approach to analyzing decision making and advocates his own approach, the "cybernetic feedback theory of decision." Steinbruner's approach may more accurately represent what happens psychologically in decision making, but his applications of it do not appear to be more relevant to the real world of strategic policy formation than the approach he criticizes. There is no recognition, at least in this paper, of differences in US and Soviet assumptions, decision makers, and decision-making processes. Steinbruner recommends no more deployment of offensive weapons; an emphasis on research and development, and specifically R&D not immediately related to actual weapons; and withholding deployment of new weapons "in the absence of gross strategic imbalances." Although Steinbruner's analysis is, in the current author's view, skewed by unspoken assumptions (he appears to be an antiwar marginalist far to the antiwar side, in Levine's spectrum), this is a serious and substantial paper with some provocative and significant points.]

SZILARD, Leo

1964

"'Minimal Deterrent' vs. 'Saturation Parity'"
Bulletin of the Atomic Scientists, March 1964
Kissinger 1965:376-91

[Szilard, a scientist and arms control advocate, urges minimal deterrence, i.e., nuclear strategic arms reduction to the point at which each superpower retains only forces sufficient to kill 25 million inhabitants of the other country.]

WASKOW, Arthur

1962

"The Theory and Practice of Deterrence"
Kissinger 1965:59-84

[Levine (1963) classifies Waskow as an antiwar marginalist, but on the basis of this paper he appears to be an antiwar systemist. He believes that the only true deterrence must follow the model of deterrence of criminal activity by government's threat of punishment, and that since such deterrence on an international scale requires international government and national disarmament, deterrence is currently unobtainable. The "practical

WATTENBERG, Ben J.

1979

"It's Time to Stop America's Retreat"
New York Times Magazine, July 22, 1979, p. 14

[Well-argued, basically hortatory article, urging stronger US posture and policies. "The old chestnut of 'peace through strength' never made better sense."]

WOHLSTETTER, Albert

1958

"The Delicate Balance of Terror"
Kissinger 1965:34-58

[This influential paper forcefully makes the case for deterrence as a complex matter requiring more than a sizable force of nuclear weapons and delivery missiles. Wohlstetter's points are summarized and discussed in the body of the present paper.]

ZEIBERG, Seymour L.

1979

"Strategic Systems Outlook"
National Defense, July/August 1979, pp. 26 ff
Reprinted in US Air Force, Current News, Main Edition,
Part II, August 15, 1979

[The author, the Deputy Under Secretary of Defense for Research and Engineering (Strategic and Space Systems), gives an overview of 1979 strategic posture. He touches briefly on deterrence, stability, and strategic balance.]

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